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Final Regulations:

310 CMR 7.70  
“Massachusetts CO<sub>2</sub> Budget Trading Program”

and Amendments to:

310 CMR 7.29  
“Emissions Standards for Power Plants”

and

310 CMR 7.00: Appendix B(7)  
“Emission Banking, Trading, and Averaging”

Regulatory Authority:  
M.G.L. c. 111, Sections 142A through 142E

January 2008

**310 CMR 7.29 has been amended by adding the double-underlined text and deleting text in strikethrough below. Changes are shown from the previous effective regulation. These amendments are being finalized as proposed.**

7.29: Emissions Standards for Power Plants

(1) Purpose and Scope. The purpose of 310 CMR 7.29 is to control emissions of nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), mercury (Hg), carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) and fine particulate matter (PM 2.5) (together "pollutants") from affected facilities in Massachusetts. 310 CMR 7.29 accomplishes this by establishing output-based emission rates for NO<sub>x</sub>, SO<sub>2</sub> and CO<sub>2</sub> and establishing a cap on CO<sub>2</sub> and Hg emissions from affected facilities. CO<sub>2</sub> emissions standards set forth in 310 CMR 7.29(5)(a)5.a. and b. shall not apply to emissions that occur after December 31, 2008.

(4) General Provisions.

(b) Any person subject to 310 CMR 7.29 shall comply with all other applicable regulations, including, but not limited to: 310 CMR 7.02: *U Plan Approval and Emission Limitations*; 310 CMR 7.19: *Reasonably Available Control Technology (RACT) for sources of Oxides of Nitrogen (NO<sub>x</sub>)*; 310 CMR 7.28: *NO<sub>x</sub> Allowance Trading Program*; 310 CMR 7.70 *CO<sub>2</sub> Budget Trading Program*, 310 CMR 7.00: *Appendix A: Emissions Offsets and Nonattainment Review*; and 310 CMR 7.00: *Appendix C: Operating Permit and Compliance Program*. If provisions or requirements from any other regulation or permit conflict with a provision of 310 CMR 7.29, the more stringent of the provisions will apply unless otherwise determined by the Department in the affected facility's operating permit. Regardless of the Department's determination in the operating permit, any person subject to 310 CMR 7.29 shall comply with all applicable federal requirements.

5. Carbon Dioxide Emission Standards.

a. By September 1, 2009~~January 30<sup>th</sup> of the year following the earliest applicable compliance date for the affected facility under 310 CMR 7.29(6)(c), and January 30<sup>th</sup> of each calendar year thereafter,~~ any person who owns, leases, operates or controls an affected facility shall demonstrate that emissions of carbon dioxide from the affected facility in ~~the previous calendar years 2006, 2007, and 2008,~~ expressed in tons, from Part 72 units located at the affected facility did not exceed historical actual emissions. If the Department has received a technically complete plan approval application under 310 CMR 7.02 for a new or repowered electric generating unit subject to 40 CFR Part 72 at an affected facility prior to May 11, 2001, then the emissions from the new or repowered unit may be included in the calculation of historical actual emissions. The calculation of historical actual emissions which includes emissions from a new or repowered unit shall not include emissions from any unit shutdown or removed from operation at the affected facility that is included in the technically complete plan approval application pursuant to 310 CMR 7.02. These emissions standards shall not apply to the emissions of CO<sub>2</sub> that occur after December 31, 2008.

b. By September 1, 2009~~January 30<sup>th</sup> of the year following the latest applicable compliance date for the affected facility under 310 CMR 7.29(6)(c), and January 30<sup>th</sup> of each calendar year thereafter,~~ any person who owns, leases, operates or

controls an affected facility shall demonstrate to the Department that the average emission rate of carbon dioxide from Part 72 units located at the affected facility did not exceed an emission rate of 1800 lbs./MWh in ~~the previous~~ calendar year 2008. The average emission rate is calculated by dividing the total number of pounds of CO<sub>2</sub> emitted by the affected facility in the calendar year by the net electrical output for the affected facility for the same calendar year. These emissions standards shall not apply to the emissions of CO<sub>2</sub> that occur after December 31, 2008.

**310 CMR 7.00: Appendix B(7) has been amended by adding the double-underlined text and deleting text in strikethrough below. Changes are shown from the previous effective regulation. Differences between the proposed regulation and the final regulation are *not* indicated.**

(7) Greenhouse Gas Credit Banking and Trading.

(c) Applicability.

1. Entry into this GHG Banking and Trading Program is voluntary.
2. 310 CMR 7.00: Appendix B(7) applies to affected facilities and any other person applying for certification or verification of GHG Credits.
3. GHG Credits certified or verified under 310 CMR 7.00: Appendix B(7) may only be used to satisfy the requirements of 310 CMR 7.29(5)(a)5., except as provided in 310 CMR 7.00 Appendix B(7)(h).
4. Applications for certification or verification of GHG Credits may be submitted by any person.

(d) Creation of GHG Credits.

3. Except as allowed pursuant to 310 CMR 7.00: Appendix B(7)(d)4, emission reduction, avoided emission or sequestered emission projects shall be located within the geographic limits of:

- a. Connecticut, Delaware, Maine, Massachusetts, Maryland, New Hampshire, New Jersey, New York, Rhode Island, Vermont, or the coastal waters thereof; or
  - b. The United States, or the coastal waters thereof, or a United States jurisdiction that has a carbon constraining program approved by the Department under not including those regions specified in 310 CMR 7.00: Appendix B(7)(d)3.a. ~~The Department shall maintain a list of approved carbon constraining programs or portions thereof.~~

4. Offset Trigger Price

- a. The Department shall establish an offset trigger price for ~~each calendar year 2006, 2007, and 2008.~~ The offset trigger price for calendar year 2006 shall be \$6.50 per ton of CO<sub>2e</sub>. For each calendar year after 2006, until such time as the offset trigger price is exceeded, the Department shall publish the new offset trigger price by January 31, which shall be equal to the previous year's offset trigger price adjusted up or down according to the previous year's Consumer Price Index.

- b. By February 15 of ~~each year 2007, June 1 of 2008, and June 1 of 2009,~~ the Department shall determine whether the offset trigger price for the previous calendar year was exceeded, or whether there are insufficient GHG Credits available for purchase at or below the offset trigger price for the previous calendar year in the geographic region specified in 310 CMR 7.00: Appendix B(7)(d)3. In determining whether the offset trigger price for the previous calendar year was exceeded, the Department may consider the average calendar year price of GHG Credits or of applied-for GHG Credits for the previous year, or any other relevant information.

- c. Notwithstanding 310 CMR 7.00: Appendix B(7)(d)3., if the Department determines that the offset trigger price for the previous calendar year was exceeded, or that there are insufficient GHG Credits available for purchase at or below the offset trigger price for the previous calendar year in the geographic

region specified in 310 CMR 7.00: Appendix B(7)(d)3., then, for all subsequent years, applicants may apply for certification and verification of projects that occur anywhere on Earth, and certification and verification of CO<sub>2</sub> of greenhouse gas allowances and CO<sub>2</sub> credits from any allowance or credit system.

5. Trust Trigger Price

a. The Department shall establish a trust trigger price for ~~each calendar year 2006, 2007, and 2008.~~ The trust trigger price for calendar year 2006 shall be \$10.00 per ton of CO<sub>2e</sub>. For each calendar year after 2006, the Department shall publish the new trust trigger price by January 31, which shall be equal to the previous year's trust trigger price adjusted up or down according to the previous year's Consumer Price Index plus 2%.

b. By February 15 of ~~each year 2007, June 1 of 2008, and June 1 of 2009,~~ the Department shall determine whether the trust trigger price for the previous calendar year was exceeded. In making this determination, the Department may consider the average calendar year price of GHG Credits, of applied-for GHG Credits, or of projects funded or credits or allowances purchased by the GHG Expendable Trust for the previous year, or any other relevant information.

c. Notwithstanding 310 CMR 7.00: Appendix B(7)(d)3. and 4., if the Department determines that the trust trigger price for the previous calendar year was exceeded, then, to demonstrate compliance with ~~the current calendar year's CO<sub>2</sub> limits 310 CMR 7.29(5)(a)5.,~~ affected facilities may pay into the GHG Expendable Trust at the price established pursuant to 310 CMR 7.00: Appendix B(7)(d)5.a. to offset all or a portion of emissions above the historical actual emissions or excess emissions pursuant to 310 CMR 7.29(5)(a)5.c. and d., so that a combination of GHG Credits and payments into the GHG Expendable Trust equals emissions above historical actual emissions plus excess emissions.

6. Notwithstanding 310 CMR 7.00: Appendix B(7)(d)3., 4., and 5., if, at any time prior to ~~January 1~~ September 1, 2009, the Commissioner determines that the price of GHG Credits or of applied-for GHG Credits substantially exceeds either of the price thresholds established in 310 CMR 7.00: Appendix B(7)(d)4. or 5., or if insufficient GHG Credits are available, then the Commissioner may, after public notice in the Environmental Monitor, and an opportunity for public comment: expand the geographic scope of; allow payments into the GHG Expendable Trust at the rate set forth in 310 CMR 7.00: Appendix B(7)(d)5.; or reduce the annual average CO<sub>2e</sub> tonnage requirements for certification of projects under 310 CMR 7.00: Appendix B(7)(e)3. This provision shall have no effect on and after ~~January 1, September 1,~~ 2009.

10. Except as provided in 310 CMR 7.00: Appendix B(7)(h), GHG Credits may be created for emissions reduced, avoided, or sequestered up to and including December 31, 2008, provided administratively complete applications for certification and verification are submitted to the Department no later than March 31, 2009. The Department shall have sole discretion to determine whether applications for certification and verification of GHG Credits are administratively complete.

(e) Procedure For Certification and Verification of Emission Reductions, Avoided Emissions, or Sequestered Emissions as GHG Credits.

1. An application for certification of GHG Credits may be submitted to the Department in advance of the time when the emission reduction, avoided emission, or sequestered emission actually occurs (prospective certification) or after the emission reduction, avoided emission, or sequestered emission has actually occurred (retrospective certification).
  2. In order for a GHG Credits to be eligible for verification, an application for verification of GHG Credits shall be submitted to the Department within two calendar years after the end of the calendar year in which the emission reduction, avoided emission, or sequestered emission actually occurred. Applicants may apply for verification a maximum of two times per calendar year per approved certification.
  3. For project-based emission reductions, avoided emissions, or sequestered emissions located within the geographic scope set forth in 310 CMR 7.00: Appendix B(7)(d)3.a., only those projects which generate an annual average over the period applied for of 5,000 or more tons CO<sub>2e</sub>, as calculated under 310 CMR 7.00: Appendix B(7)(d), are eligible to be certified as GHG Credits. For project-based emission reductions, avoided emissions, or sequestered emissions located within the geographic scope set forth in 310 CMR 7.00: Appendix B(7)(d)3.b., only those projects which generate an annual average over the period applied for of 20,000 or more tons CO<sub>2e</sub>, as calculated under 310 CMR 7.00: Appendix B(7)(d), are eligible to be certified as GHG Credits.
  5. Applications for GHG Credits from other carbon constraining programs.
    - a. The Department may approve allowances or credits from any carbon constraining program as GHG Credits to be used to demonstrate compliance with 310 CMR 7.29(5)(a)5., provided that the Department determines such program or portion thereof has procedures in place to ensure allowances or credits are real, additional, verifiable, permanent and enforceable. The Department shall maintain a list of approved programs.
- (g) Use and Purchase of GHG Credits.
1. To the extent that affected facilities use GHG Credits to comply with 310 CMR 7.29(5)(a)5., only GHG Credits verified under 310 CMR 7.00: Appendix B(7) may be used, ~~except as allowed by 310 CMR 7.00: Appendix B(7)(g)2.~~
  2. ~~Affected facilities may use GHG Credits certified in calendar years 2006 and 2007 to meet any compliance obligation under 310 CMR 7.29(5)(a)5. for those years, provided that such GHG Credits are verified by December 31, 2008. If any certified GHG Credits which were used for calendar year 2006 or 2007 compliance with 310 CMR 7.29 are not verified by December 31, 2008 due to leakage or any other reason, the affected facility using the certified GHG Credits shall provide an equivalent amount of valid GHG Credits in the 310 CMR 7.29 calendar year 2008 report due January 30, 2009. Notwithstanding 310 CMR 7.29(7), for calendar year 2006 only, affected facilities shall demonstrate compliance with 310 CMR 7.29(5)(a)5. on or before September 1, 2007. If GHG Credits are used to demonstrate compliance, then said GHG Credits must be certified on or before September 1, 2007.~~
  3. ~~2.~~ GHG Credits that have been used to satisfy any GHG liability or requirement other than 310 CMR 7.29, with the exception of requirements to disclose environmental and other attributes of electricity generation, shall not be eligible for use to comply with the requirements of 310 CMR 7.29.

~~4.3.~~ Any person who purchases a GHG Credit from any source shall report the price paid per GHG Credit to the Department within 30 days of purchase.

~~5.4.~~ Once the Department approves an allowance or credit program or portion thereof pursuant to 310 CMR 7.00: Appendix B(7)(e)5.a., an affected facility may demonstrate compliance with the CO<sub>2</sub> provisions of 310 CMR 7.29 by demonstrating in the 310 CMR 7.29 compliance report ~~due by January 30 of each year, or by September 1, 2007 as allowed in 310 CMR 7.00: Appendix B(7)(g)2.,~~ that such allowances or credits have been retired for compliance with 310 CMR 7.29(5)(a)5. and by reporting the price paid for such allowances or credits.

~~6.5.~~ Nothing in 310 CMR 7.00: Appendix B(7) or 310 CMR 7.29 (5)(a)5. shall be construed to limit the authority of the Department to terminate, void, or limit GHG Credits that have been certified or verified.

~~7.6.~~ If the Department determines that any emission reductions, avoided emissions, or sequestered emissions used to generate GHG Credits are not real, additional, verifiable, permanent, or enforceable as defined in 310 CMR 7.00: Appendix B(7)(b), such GHG Credits shall become void.

~~8.7.~~ Any affected facility using voided GHG Credits shall replace the voided GHG Credits with an equivalent amount of valid GHG Credits and shall demonstrate compliance with this provision within one year of the date that the Department determines that such GHG Credits are void.

~~9.8.~~ For purposes of 310 CMR 7.00: Appendix B(7), violations of the requirements herein may be enforced against the affected facility, any person who applied for certification or verification of GHG Credits, or any combination thereof. Nothing herein shall limit the ability of the Department to take enforcement action for violations of 310 CMR 7.29 or 310 CMR 7.00: Appendix B(7).

~~(h) Program review.~~

~~1. The Department shall conduct a review of the GHG emission trading program beginning in 2010 and every five years thereafter. This review shall evaluate the reduction of CO<sub>2</sub> emissions, handling of applications for GHG Credit approval, and the use of approved GHG Credits, and may include review of GHG Credit creation and use protocols, and compliance assessment of sources using GHG Credit. The program review may also include assessment of the impact of the program on New England Governors/Eastern Canadian Premiers Climate Change Action Plan milestones.~~

~~2. The Department may propose the appropriate program revisions pursuant to Chapter 30A administrative procedures based upon program review.~~

(h) Exchange of GHG Credits for CO<sub>2</sub> Budget Trading Program CO<sub>2</sub> Allowances.

1. Eligibility. GHG Credits shall be eligible for exchange with CO<sub>2</sub> Budget Trading Program CO<sub>2</sub> Allowances provided:

a. The project from which the GHG Credits were derived is not an offset project type listed under 310 CMR 7.70(10)(c)1.a.

b. The GHG Credits were not created from allowances or credits from another carbon constraining program pursuant to 310 CMR 7.00: Appendix B(7)(e)5.

c. An administratively complete application for certification of GHG Credits was submitted to the Department no later than January 25, 2008. The Department shall have sole discretion to determine whether an application for certification of GHG Credits is administratively complete.

2. Verification Deadline. GHG Credits may be created for emissions reduced, avoided, or sequestered up to and including December 31, 2012, provided:
- a. The GHG Credits meet the requirements of 310 CMR 7.00: Appendix B(7)(h)1.; and,
  - b. An administratively complete application for verification is submitted to the Department no later than March 31, 2013. The Department shall have sole discretion to determine whether an application for verification of GHG Credits is administratively complete.
3. Exchange.
- a. At any time after January 1, 2009 and prior to December 1, 2013, any person may apply to the Department for CO<sub>2</sub> Budget Trading Program CO<sub>2</sub> Allowances in exchange for GHG Credits that meet the requirements of 310 CMR 7.00: Appendix B(7)(h)1. and 2. and which have been verified by the Department pursuant to 310 CMR 7.00: Appendix B(7)(e) and (f).
  - b. The Department shall exchange one (1) CO<sub>2</sub> Budget Trading Program CO<sub>2</sub> allowance set aside pursuant to 310 CMR 7.70(5)(c)1.a. for every two (2) GHG Credits provided to the Department pursuant to 310 CMR 7.00: Appendix B(7)(h)3.a.
  - c. The Department shall retire all GHG Credits exchanged for CO<sub>2</sub> Budget Trading Program CO<sub>2</sub> Allowances.



**310 CMR 7.70 is being finalized as shown below. Changes are shown from the proposed regulation. Additions to the proposed version are shown as double-underlined text, and deletions are shown in strikethrough.**

7.70: Massachusetts CO<sub>2</sub> Budget Trading Program

(1) CO<sub>2</sub> Budget Trading Program General Provisions.

(a) Purpose. 310 CMR 7.70 establishes the Massachusetts CO<sub>2</sub> Budget Trading Program, which is designed to stabilize and then reduce anthropogenic emissions of CO<sub>2</sub>, a greenhouse gas, from CO<sub>2</sub> budget sources in an economically efficient manner.

(b) Definitions.

Account number. The identification number given by the Department or its agent to each CO<sub>2</sub> Allowance Tracking System account.

Acid rain emissions limitation. As defined in 40 CFR 72.2, a limitation on emissions of sulfur dioxide or nitrogen oxides under the Acid Rain Program under title IV of the Clean Air Act.

Administrator. Administrator means the Administrator of the United States Environmental Protection Agency or the Administrator's authorized representative.

Allocate or allocation. The determination by the Department of the number of CO<sub>2</sub> allowances to be recorded in the Greenhouse Gas Credit Exchange Set-aside account, the Voluntary Renewable Energy Account, or the Massachusetts Auction Account.

Allocation year. A calendar year for which the Department allocates or awards CO<sub>2</sub> allowances pursuant to 310 CMR 7.70(5) and (10). The allocation year is the first year a CO<sub>2</sub> allowance or a CO<sub>2</sub> offset allowance can be used to demonstrate compliance with 310 CMR 7.70. The allocation year of each CO<sub>2</sub> allowance is reflected in the unique identification number given to the allowance pursuant to 310 CMR 7.70(6)(d)6.

Automated data acquisition and handling system or DAHS. That component of the continuous emissions monitoring system, or other emissions monitoring system approved for use under 310 CMR 7.70(8), designed to interpret and convert individual output signals from pollutant concentration monitors, flow monitors, diluent gas monitors, and other component parts of the monitoring system to produce a continuous record of the measured parameters in the measurement units required by 310 CMR 7.70(8).

Award. The determination by the Department of the number of CO<sub>2</sub> allowances to be recorded in the compliance account of a CO<sub>2</sub> budget unit for Early Reduction CO<sub>2</sub> Allowances pursuant to 310 CMR 7.70(5)(c)2, or the determination by the Department of the number of CO<sub>2</sub> offset allowances to be recorded in the general account of ~~the a project sponsor pursuant to 310 CMR 7.70 (10)(g) sponsor of an approved CO<sub>2</sub> emissions offset project.~~ Award is a type of allocation.

Billing meter. The measurement device used to measure electric or thermal output for commercial billing under a contract where the facility selling the electric or thermal

output has a different owner(s) from the owner(s) of the party purchasing the electric or thermal output.

Boiler. An enclosed fossil or other fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam, or other medium.

CO<sub>2</sub> allowance. A limited authorization by the Department or a participating state under the CO<sub>2</sub> Budget Trading Program to emit up to one ton of CO<sub>2</sub>, subject to all applicable limitations contained in 310 CMR 7.70 or equivalent regulations in participating states.

CO<sub>2</sub> allowance deduction or deduct CO<sub>2</sub> allowances. The permanent withdrawal of CO<sub>2</sub> allowances by the Department or its agent from a CO<sub>2</sub> Allowance Tracking System compliance account to account for the number of tons of CO<sub>2</sub> emitted from a CO<sub>2</sub> budget source for a control period, determined in accordance with 310 CMR 7.70(8), or for the forfeit or retirement of CO<sub>2</sub> allowances as provided by 310 CMR 7.70.

CO<sub>2</sub> allowance price. The price for CO<sub>2</sub> allowances in the CO<sub>2</sub> Budget Trading Program for a particular time period as determined by the Department or its agent, calculated based on a volume-weighted average of transaction prices reported to the Department or its agent, and taking into account prices as reported publicly through reputable sources.

CO<sub>2</sub> allowances held or hold CO<sub>2</sub> allowances. The CO<sub>2</sub> allowances recorded by the Department or its agent, or submitted to the Department or its agent for recordation, in accordance with 310 CMR 7.70(6) and (7), in a CO<sub>2</sub> Allowance Tracking System account.

CO<sub>2</sub> Allowance Tracking System. The system by which the Department or its agent records allocations, deductions, and transfers of CO<sub>2</sub> allowances under the CO<sub>2</sub> Budget Trading Program. The tracking system may also be used to track CO<sub>2</sub> emissions offset projects, CO<sub>2</sub> allowance prices and emissions from affected sources.

CO<sub>2</sub> Allowance Tracking System account. An account in the CO<sub>2</sub> Allowance Tracking System established by the Department or its agent for purposes of recording the allocation, holding, transferring, or deducting of CO<sub>2</sub> allowances.

CO<sub>2</sub> allowance transfer deadline. Midnight of the March 1 occurring after the end of the relevant control period or, if that March 1 is not a business day, midnight of the first business day thereafter and is the deadline by which CO<sub>2</sub> allowances must be submitted for recordation in a CO<sub>2</sub> budget source's compliance account in order for the source to meet the ~~source's~~ CO<sub>2</sub> requirements under 310 CMR 7.70(1)(e)3. for the control period immediately preceding such deadline.

CO<sub>2</sub> authorized account representative. For a CO<sub>2</sub> budget source and each CO<sub>2</sub> budget unit at the source, the natural person who is authorized by the owners and operators of the source and all CO<sub>2</sub> budget units at the source, in accordance with 310 CMR 7.70(2), to represent and legally bind each owner and operator in matters pertaining to the CO<sub>2</sub> Budget Trading Program or, for a general account, the natural person who is authorized, under 310 CMR 7.70(6), to transfer or otherwise dispose of CO<sub>2</sub> allowances held in the general account.

CO<sub>2</sub> budget emissions control plan. The legally binding permit issued by the Department pursuant to 310 CMR 7.70(21)(e)1. and 310 CMR 7.70(3) to a CO<sub>2</sub> budget source or CO<sub>2</sub> budget unit which specifies the CO<sub>2</sub> Budget Trading Program requirements applicable to the CO<sub>2</sub> budget source, to each CO<sub>2</sub> budget unit at the CO<sub>2</sub> budget source, and to the owners and operators and the CO<sub>2</sub> authorized account representative of the CO<sub>2</sub> budget source and each CO<sub>2</sub> budget unit.

CO<sub>2</sub> budget emissions limitation. For a CO<sub>2</sub> budget source, the tonnage equivalent, in CO<sub>2</sub> emissions in a control period, of the CO<sub>2</sub> allowances available for compliance deduction for the source for a control period.

CO<sub>2</sub> budget source. A source that includes one or more CO<sub>2</sub> budget units.

CO<sub>2</sub> Budget Trading Program. A multi-state CO<sub>2</sub> air pollution control and emissions reduction program established by regulation in several states, including Massachusetts pursuant to 310 CMR 7.70, for the purpose of reducing emissions of CO<sub>2</sub> from CO<sub>2</sub> budget sources.

CO<sub>2</sub> budget unit. A unit that is subject to the CO<sub>2</sub> Budget Trading Program requirements under 310 CMR 7.70(1)(d).

CO<sub>2</sub> equivalent. The quantity of a given greenhouse gas multiplied by its global warming potential (GWP).

CO<sub>2</sub> offset allowance. A CO<sub>2</sub> allowance that is awarded to the sponsor of a CO<sub>2</sub> emissions offset project pursuant to 310 CMR 7.70(10)(g) and is subject to the relevant compliance deduction limitations of 310 CMR 7.70(6)(e)1.c.

Combined cycle system. A system comprised of one or more combustion turbines, heat recovery steam generators, and steam turbines configured to improve overall efficiency of electricity generation or steam production.

Combustion turbine. An enclosed fossil or other fuel-fired device that is comprised of a compressor (if applicable), a combustor, and a turbine, and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine.

Commence commercial operation. With regard to a unit that serves a generator, to have begun to produce steam, gas, or other heated medium used to generate electricity for sale or use, including test generation. For a unit that is a CO<sub>2</sub> budget unit under 310 CMR 7.70(1)(d) on the date the unit commences commercial operation, such date shall remain the unit's date of commencement of commercial operation even if the unit is subsequently modified, reconstructed, or repowered. For a unit that is not a CO<sub>2</sub> budget unit under 310 CMR 7.70(1)(d) on the date the unit commences commercial operation, the date the unit becomes a CO<sub>2</sub> budget unit under 310 CMR 7.70(1)(d) shall be the unit's date of commencement of commercial operation.

Commence operation. To begin any mechanical, chemical, or electronic process, including, with regard to a unit, startup of a unit's combustion chamber. For a unit that is a CO<sub>2</sub> budget unit under 310 CMR 7.70(1)(d) on the date of commencement of operation, such date shall remain the unit's date of commencement of operation even if the unit is subsequently modified, reconstructed, or repowered. For a unit that is not a CO<sub>2</sub> budget unit under 310 CMR 7.70(1)(d) on the date of commencement of operation, the date the unit becomes a CO<sub>2</sub> budget unit under 310 CMR 7.70(1)(d) shall be the unit's date of commencement of operation

Compliance account. A CO<sub>2</sub> Allowance Tracking System account, established by the Department or its agent for a CO<sub>2</sub> budget source under 310 CMR 7.70(6), in which are held CO<sub>2</sub> allowances available for use by the source for a control period for the purpose of meeting the source's CO<sub>2</sub> requirements of 310 CMR 7.70(1)(e)3.

Continuous emissions monitoring system or CEMS. The equipment required under 310 CMR 7.70(8) to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated DAHS), a permanent record of stack gas volumetric flow rate, stack gas moisture content, and oxygen or carbon dioxide concentration (as applicable), in a manner consistent with 40 CFR Part 75 and 310 CMR 7.70(8). ~~The following systems are types of continuous emissions monitoring systems required under 310 CMR 7.70(8):~~

- ~~1. A flow monitoring system, consisting of a stack flow rate monitor and an automated data acquisition and handling system and providing a permanent, continuous record of stack gas volumetric flow rate, in standard cubic feet per hour (scfh);~~
- ~~2. A nitrogen oxides emissions rate (or NO<sub>x</sub>-diluent) monitoring system, consisting of a NO<sub>x</sub> pollutant concentration monitor, a diluent gas (CO<sub>2</sub> or O<sub>2</sub>) monitor, and an automated data acquisition and handling system and providing a permanent, continuous record of NO<sub>x</sub> concentration, in parts per million (ppm), diluent gas concentration, in percent CO<sub>2</sub> or O<sub>2</sub>, and NO<sub>x</sub> emissions rate, in pounds per million British thermal units (lb/MMBtu);~~
- ~~3. A moisture monitoring system, as defined in 40 CFR 75.11(b)(2) and providing a permanent, continuous record of the stack gas moisture content, in percent H<sub>2</sub>O;~~
- ~~4. A carbon dioxide monitoring system, consisting of a CO<sub>2</sub> pollutant concentration monitor (or an oxygen monitor plus suitable mathematical equations from which the CO<sub>2</sub> concentration is derived) and an automated data acquisition and handling system and providing a permanent, continuous record of CO<sub>2</sub> emissions, in percent CO<sub>2</sub>; and,~~
- ~~5. An oxygen monitoring system, consisting of an O<sub>2</sub> concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of O<sub>2</sub>, in percent O<sub>2</sub>.~~

Control period. The control period is a three-calendar-year time period, unless extended to four years upon occurrence of a stage two trigger event. The first control period is from January 1, 2009 to December 31, 2011, inclusive, provided that if a stage two trigger event occurs during the first control period, then the first control period shall be extended one-year to December 31, 2012, inclusive. Each subsequent sequential three-calendar-year period is a separate control period that is subject to one one-year extension upon occurrence of a stage two trigger event during the control period. In no event may a control period be longer than four calendar years.

Eligible biomass. Eligible biomass includes sustainably harvested woody and herbaceous fuel sources that are available on a renewable or recurring basis (excluding old-growth timber), including dedicated energy crops and trees, agricultural food and feed crop residues, aquatic plants, unadulterated wood and wood residues, animal wastes, other clean organic wastes not mixed with other solid wastes, ~~and biogas, and other neat liquid biofuels~~ derived from such fuel sources. Liquid biofuels do not qualify as eligible biomass. Sustainably harvested shall be determined by the Department.

Excess emissions. Any tonnage of CO<sub>2</sub> emitted by a CO<sub>2</sub> budget source during a control period that exceeds the CO<sub>2</sub> budget emissions limitation for the source.

Fossil fuel. Natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material.

Fossil fuel-fired.

1. With regard to a unit that commenced operation prior to January 1, 2005, the combustion of fossil fuel, alone or in combination with any other fuel, where the fossil fuel combusted comprises, or is projected to comprise, more than 50 percent of the annual heat input on a Btu basis during any year.
2. With regard to a unit that commences operation on or after January 1, 2005, the combustion of fossil fuel, alone or in combination with any other fuel, where the fossil fuel combusted comprises, or is projected to comprise, more than 5 percent of the annual heat input on a Btu basis during any year.

General account. A CO<sub>2</sub> Allowance Tracking System account, established under 310 CMR 7.70(6), that is not a compliance account.

Global warming potential (GWP). A measure of the radiative efficiency (heat-absorbing ability) of a particular gas relative to that of carbon dioxide (CO<sub>2</sub>) after taking into account the decay rate of each gas (the amount removed from the atmosphere over a given number of years) relative to that of CO<sub>2</sub>.

Gross generation. The electrical output (in MWe) at the terminals of the generator.

Life-of-the-unit contractual arrangement. A unit participation power sales agreement under which a customer reserves, or is entitled to receive, a specified amount or percentage of nameplate capacity and/or associated energy from any specified unit pursuant to a contract:

1. For the life of the unit;
2. For a cumulative term of no less than 25 years, including contracts that permit an election for early termination; or,
3. For a period equal to or greater than either 20 years, or 70 percent of the economic useful life of the unit determined as of the time the unit is built, with option rights to purchase or release some portion of the nameplate capacity and associated energy generated by the unit at the end of the period.

Market settling period. The first fourteen months of any control period.

Massachusetts CO<sub>2</sub> Budget Trading Program Base Budget. The annual amount of CO<sub>2</sub> tons available in Massachusetts for allocation in a given allocation year, in accordance with the CO<sub>2</sub> Budget Trading Program. CO<sub>2</sub> offset allowances awarded pursuant to 310 CMR 7.70(10) and Early Reduction CO<sub>2</sub> Allowances awarded pursuant to 310 CMR 7.70(5)(c)2. are separate from and additional to CO<sub>2</sub> allowances allocated from the Massachusetts CO<sub>2</sub> Budget Trading Program Base Budget.

Massachusetts Division of Energy Resources (DOER). The Massachusetts agency established pursuant to M.G.L. c. 25A, sections 1-13.

Massachusetts Auction Account. An account administered by the Massachusetts Division of Energy Resources for purposes of auctioning CO<sub>2</sub> allowances.

Maximum design heat input. The ability of a unit to combust a stated maximum amount of fuel per hour on a steady state basis, as determined by the physical design and physical characteristics of the unit.

Maximum potential hourly heat input. An hourly heat input used for reporting purposes when a unit lacks certified monitors to report heat input. If the unit intends to use appendix D of 40 CFR Part 75 to report heat input, this value should be calculated, in accordance with 40 CFR Part 75, using the maximum fuel flow rate and the maximum gross calorific value. If the unit intends to use a flow monitor and a diluent gas monitor, this value should be reported, in accordance with 40 CFR Part 75, using the maximum potential flowrate and either the maximum carbon dioxide concentration (in percent CO<sub>2</sub>) or the minimum oxygen concentration (in percent O<sub>2</sub>).

Monitoring system. Any monitoring system that meets the requirements of 310 CMR 7.70(8), including a continuous emissions monitoring system, an excepted monitoring system, or an alternative monitoring system.

Nameplate capacity. The maximum electrical output (in MWe) that a generator can sustain over a specified period of time when not restricted by seasonal or other deratings as measured in accordance with the United States Department of Energy standards.

Non-CO<sub>2</sub> budget unit. A unit that does not meet the applicability criteria of 310 CMR 7.70(1)(d).

Operator. Any person who operates, controls, or supervises a CO<sub>2</sub> budget unit or a CO<sub>2</sub> budget source and shall include, but not be limited to, any holding company, utility system, or plant manager of such a unit or source.

Owner. Any of the following persons:

1. Any holder of any portion of the legal or equitable title in a CO<sub>2</sub> budget unit; or
2. Any holder of a leasehold interest in a CO<sub>2</sub> budget unit, other than a passive lessor, or a person who has an equitable interest through such lessor, whose rental payments are not based, either directly or indirectly, upon the revenues or income from the CO<sub>2</sub> budget unit; or,
3. Any purchaser of power from a CO<sub>2</sub> budget unit under a life-of-the-unit contractual arrangement in which the purchaser controls the dispatch of the unit; or

4. With respect to any general account, any person who has an ownership interest with respect to the CO<sub>2</sub> allowances held in the general account and who is subject to the binding agreement for the CO<sub>2</sub> authorized account representative to represent that person's ownership interest with respect to the CO<sub>2</sub> allowances.

Participating state. A state that is a member of the CO<sub>2</sub> Budget Trading Program and has promulgated a regulation consistent with 310 CMR 7.70.

Receive or receipt of. When referring to the Department or its agent, to come into possession of a document, information, or correspondence (whether sent in writing or by authorized electronic transmission), as indicated in an official correspondence log, or by a notation made on the document, information, or correspondence, by the Department or its agent in the regular course of business.

Recordation, record, or recorded. With regard to CO<sub>2</sub> allowances, the movement of CO<sub>2</sub> allowances by the Department or its agent from one CO<sub>2</sub> Allowance Tracking System account to another.

Serial number. When referring to CO<sub>2</sub> allowances, the unique identification number assigned to each CO<sub>2</sub> allowance by the Department or its agent under 310 CMR 7.70(6)(d)6.

Source. Any governmental, institutional, commercial, or industrial structure, installation, plant, building, or facility that emits or has the potential to emit any air pollutant. A "source," including a "source" with multiple units, shall be considered a single "facility."

Stage one threshold price. The monetary amount, established as of the first day of each calendar year, derived annually from use of the following formula:

$$S1TP(2005+n) = S1TP(2005) \times [1 + (CPI(2005+n) - CPI(2005))/CPI(2005)]$$

where:

"S1TP" is the stage one threshold price;

"S1TP(2005)" is \$7;

"n" is the number of years since 2005; and,

"CPI" means, for purposes of the CO<sub>2</sub> Budget Trading Program, the U.S. Department of Labor, Bureau of Labor Statistics unadjusted Consumer Price Index for All Urban Consumers for the U.S. city average, for All Items on the latest reference base, or if such index is no longer published, such other index as the Department determines is appropriate. The CPI for any calendar year is the ~~twelve-12~~ month average of the CPI published by the United States Department of Labor, as of the close of the ~~twelve-12~~ month period ending on August ~~thirty-first~~31 of each calendar year.

Stage one trigger event. The occurrence of any ~~twelve-12~~ month period that completely transpires following the market settling period and is characterized by an average CO<sub>2</sub> allowance price that is equal to or greater than the stage one threshold price.

Stage two threshold price. The monetary amount, established as of the first day of each calendar year, derived annually from use of the following formula:

$$S2TP(2005+n) = [ S2TP(2005+(n-1)) \times [ \{ CPI(2005+(n-1)) - CPI(2005+(n-2)) \} / CPI(2005+(n-2)) ] + 0.02 ] + S2TP(2005+(n-1))$$

where:

“S2TP” is the stage two threshold price;

“S2TP(2005)” is \$10;~~and,~~

“n” is the number of years since 2005;~~and,~~

“CPI” means, for purposes of the CO<sub>2</sub> Budget Trading Program, the U.S. Department of Labor, Bureau of Labor Statistics unadjusted Consumer Price Index for All Urban Consumers for the U.S. city average, for All Items on the latest reference base, or if such index is no longer published, such other index as the Department determines is appropriate. The CPI for any calendar year is the ~~twelve~~12 month average of the CPI published by the United States Department of Labor, as of the close of the ~~twelve~~12 month period ending on August ~~31~~thirty-first of each calendar year.

Stage two trigger event. The occurrence of any ~~twelve~~12 month period that completely transpires following the market settling period and is characterized by an average CO<sub>2</sub> allowance price that is equal to or greater than the stage two threshold price.

State. A U.S. State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, and American Samoa and includes the Commonwealth of the Northern Mariana Islands.

Submit or serve. To send or transmit a document, information, or correspondence to the person specified in accordance with the applicable regulation:

1. In person;
2. By United States Postal Service; or,
3. By other means of dispatch or transmission and delivery.

Compliance with any “submission,” “service,” or “mailing” deadline shall be determined by the date of dispatch, transmission, or mailing and not the date of receipt.

Ton or tonnage. Any “short ton”, or 2,000 pounds. For the purpose of determining compliance with the CO<sub>2</sub> requirements of 310 CMR 7.70(1)(e)3., total tons for a control period shall be calculated as the sum of all recorded hourly emissions (or the tonnage equivalent of the recorded hourly emissions rates) in accordance with 310 CMR 7.70(8), with any remaining fraction of a ton equal to or greater than 0.50 ton deemed to equal one ton and any fraction of a ton less than 0.50 ton deemed to equal zero tons. A short ton is equal to 0.9072 metric tons.

Twelve month period. A period of twelve consecutive months determined on a rolling basis where a new twelve month period begins on the first day of each calendar month.

Unit. A fossil fuel-fired stationary boiler, combustion turbine, or combined cycle system.

Unit operating day. A calendar day in which a unit combusts any fuel.

(c) Measurements, abbreviations and acronyms. Measurements, abbreviations, and acronyms used in 310 CMR 7.70 are defined as follows:

1. CO<sub>2</sub> – carbon dioxide.
2. g – grams.
3. hr – hour.



4. lb – pounds.
  5. mol – mole. 1 mole =  $6.022 \times 10^{23}$  molecules.
  6. MWe – megawatt electrical.
  7. scf – standard cubic feet.
- (d) Applicability. Any unit that, at any time on or after January 1, 2005, serves an electricity generator with a nameplate capacity equal to or greater than 25 MWe shall be a CO<sub>2</sub> budget unit, and any source that includes one or more such units shall be a CO<sub>2</sub> budget source, subject to the requirements of 310 CMR 7.70.

(e) Standard requirements.

1. CO<sub>2</sub> budget emission control plan requirements.
  - a. The CO<sub>2</sub> authorized account representative of each CO<sub>2</sub> budget source shall:
    - i. Submit to the Department a complete CO<sub>2</sub> budget emission control plan under 310 CMR 7.70(3)(c) in accordance with the deadlines specified in 310 CMR 7.70(3)(b); and,
    - ii. Submit in a timely manner any supplemental information that the Department determines is necessary in order to review and approve or deny the CO<sub>2</sub> budget emission control plan.
  - b. The owners and operators of each CO<sub>2</sub> budget source and each CO<sub>2</sub> budget unit for the source shall have an approved CO<sub>2</sub> budget emission control plan and operate the CO<sub>2</sub> budget source and the CO<sub>2</sub> budget unit at the source in compliance with such approved CO<sub>2</sub> budget emission control plan.
2. Monitoring requirements.
  - a. The owners and operators and, to the extent applicable, the CO<sub>2</sub> authorized account representative of each CO<sub>2</sub> budget source and each CO<sub>2</sub> budget unit at the source shall comply with the monitoring requirements of 310 CMR 7.70(8).
  - b. The emissions measurements recorded and reported in accordance with 310 CMR 7.70(8) shall be used to determine compliance by the unit with the CO<sub>2</sub> requirements of 310 CMR 7.70(1)(e)3.
3. CO<sub>2</sub> requirements.
  - a. The owners and operators of each CO<sub>2</sub> budget source and each CO<sub>2</sub> budget unit at the source shall hold CO<sub>2</sub> allowances available for compliance deductions under 310 CMR 7.70(6)(e), as of the CO<sub>2</sub> allowance transfer deadline, in the source's compliance account in an amount not less than the total CO<sub>2</sub> emissions for the control period from all CO<sub>2</sub> budget units at the source, as determined in accordance with 310 CMR 7.70(6) and (8).
  - b. Each ton of CO<sub>2</sub> emitted in excess of the CO<sub>2</sub> budget emissions limitation shall constitute a separate violation of 310 CMR 7.70 and applicable state law.
  - c. A CO<sub>2</sub> budget unit shall be subject to the requirements under 310 CMR 7.70(1)(e)3.a. on January 1, 2009 or the date on which the unit commences operation, whichever comes later.
  - d. CO<sub>2</sub> allowances shall be held in, deducted from, or transferred among CO<sub>2</sub> Allowance Tracking System accounts in accordance with 310 CMR 7.70(5), (6), and (7), and 310 CMR 7.70(10)(g).
  - e. A CO<sub>2</sub> allowance shall not be deducted in order to comply with the requirements under 310 CMR 7.70(1)(e)3.a. for a control period that ends prior to the year for which the CO<sub>2</sub> allowance was allocated. A CO<sub>2</sub> offset allowance shall not be deducted in order to comply with the requirements under 310 CMR

- 7.70(1)(e)3.a. beyond the applicable percent limitations set out in 310 CMR 7.70(6)(e)1.c.
- f. A CO<sub>2</sub> allowance under the CO<sub>2</sub> Budget Trading Program is a limited authorization by the Department or a participating state to emit one ton of CO<sub>2</sub> in accordance with the CO<sub>2</sub> Budget Trading Program. No provision of the CO<sub>2</sub> Budget Trading Program, the application for a CO<sub>2</sub> budget emissions control plan, or the approved CO<sub>2</sub> budget emissions control plan, or any provision of law shall be construed to limit the authority of the State to terminate or limit such authorization.
- g. A CO<sub>2</sub> allowance ~~allocated by the Department~~ under the CO<sub>2</sub> Budget Trading Program does not constitute a property right.
4. Excess emissions requirements. The owners and operators of a CO<sub>2</sub> budget source that has excess emissions in any control period shall:
- Forfeit the CO<sub>2</sub> allowances required for deduction under 310 CMR 7.70(6)(e)4.a., provided CO<sub>2</sub> offset allowances may not be used to cover any part of such excess emissions; and,
  - Pay any fine, penalty, or assessment or comply with any other remedy imposed under 310 CMR 7.70(6)(e)4.b.
5. Recordkeeping and reporting requirements.
- Unless otherwise provided, the owners and operators of the CO<sub>2</sub> budget source and each CO<sub>2</sub> budget unit at the source shall keep on site at the source each of the following documents for a period of 10 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 10 years, in writing by the Department.
    - The account certificate of representation for the CO<sub>2</sub> authorized account representative for the source and each CO<sub>2</sub> budget unit at the source and all documents that demonstrate the truth of the statements in the account certificate of representation, in accordance with 310 CMR 7.70(2)(d), provided that the certificate and documents shall be retained on site at the source beyond such 10-year period until such documents are superseded because of the submission of a new account certificate of representation changing the CO<sub>2</sub> authorized account representative.
    - All emissions monitoring information, in accordance with 310 CMR 7.70(8) and 40 CFR 75.57.
    - Copies of all reports, compliance certifications, and other submissions and all records made or required under the CO<sub>2</sub> Budget Trading Program.
    - Copies of all documents used to complete an application for a CO<sub>2</sub> budget emissions control plan and any other submission under the CO<sub>2</sub> Budget Trading Program or to demonstrate compliance with the requirements of the CO<sub>2</sub> Budget Trading Program.
  - The CO<sub>2</sub> authorized account representative of a CO<sub>2</sub> budget source and each CO<sub>2</sub> budget unit at the source shall submit the reports and compliance certifications required under the CO<sub>2</sub> Budget Trading Program, including those under 310 CMR 7.70(4).
6. Liability.
- No revision to a CO<sub>2</sub> budget emissions control plan shall excuse any violation of the requirements of the CO<sub>2</sub> Budget Trading Program that occurs prior to the date that the revision takes effect.

- b. Any provision of the CO<sub>2</sub> Budget Trading Program that applies to a CO<sub>2</sub> budget source (including a provision applicable to the CO<sub>2</sub> authorized account representative of a CO<sub>2</sub> budget source) shall also apply to the owners and operators of such source and of the CO<sub>2</sub> budget units at the source.
- c. Any provision of the CO<sub>2</sub> Budget Trading Program that applies to a CO<sub>2</sub> budget unit (including a provision applicable to the CO<sub>2</sub> authorized account representative of a CO<sub>2</sub> budget unit) shall also apply to the owners and operators of such unit.

7. Effect on other authorities.

- a. No provision of the CO<sub>2</sub> Budget Trading Program, a CO<sub>2</sub> budget emissions control plan application, or an approved CO<sub>2</sub> budget emissions control plan, shall be construed as exempting or excluding the owners and operators and, to the extent applicable, the CO<sub>2</sub> authorized account representative of a CO<sub>2</sub> budget source or CO<sub>2</sub> budget unit from compliance with any other provisions of applicable State and federal law and regulations.

(f) Computation of time.

- 1. Unless otherwise stated, any time period scheduled under the CO<sub>2</sub> Budget Trading Program to begin on the occurrence of an act or event shall begin on the day the act or event occurs.
- 2. Unless otherwise stated, any time period scheduled under the CO<sub>2</sub> Budget Trading Program to begin before the occurrence of an act or event shall be computed so that the period ends the day before the act or event occurs.
- 3. Unless otherwise stated, if the final day of any time period under the CO<sub>2</sub> Budget Trading Program falls on a weekend or a Massachusetts or Federal holiday, the time period shall be extended to the next business day.

- (g) Severability. If any provision of 310 CMR 7.70, or its application to any particular person or circumstances, is held invalid, the remainder of 310 CMR 7.70, and the application thereof to other persons or circumstances, shall not be affected thereby.

(2) CO<sub>2</sub> Authorized Account Representative for CO<sub>2</sub> Budget Sources.

(a) Authorization and responsibilities of the CO<sub>2</sub> authorized account representative.

- 1. Except as provided under 310 CMR 7.70(2)(b), each CO<sub>2</sub> budget source, including all CO<sub>2</sub> budget units at the source, shall have one and only one CO<sub>2</sub> authorized account representative, with regard to all matters under the CO<sub>2</sub> Budget Trading Program concerning the source or any CO<sub>2</sub> budget unit at the source.
- 2. The CO<sub>2</sub> authorized account representative of the CO<sub>2</sub> budget source shall be selected by an agreement binding on the owners and operators of the source and all CO<sub>2</sub> budget units at the source.
- 3. Upon receipt by the Department or its agent of a complete account certificate of representation under 310 CMR 7.70(2)(d), the CO<sub>2</sub> authorized account representative of the source shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each owner and operator of the CO<sub>2</sub> budget source represented and each CO<sub>2</sub> budget unit at the source in all matters pertaining to the CO<sub>2</sub> Budget Trading Program, notwithstanding any agreement between the CO<sub>2</sub> authorized account representative and such owners and operators. The owners and operators shall be bound by any decision or order issued to the CO<sub>2</sub> authorized account representative by the Department or a court regarding the source or unit.
- 4. No CO<sub>2</sub> budget emissions control plan shall be issued, and no CO<sub>2</sub> Allowance Tracking System account shall be established for a CO<sub>2</sub> budget source, until the

Department or its agent has received a complete account certificate of representation under 310 CMR 7.70(2)(d) for a CO<sub>2</sub> authorized account representative of the source and the CO<sub>2</sub> budget units at the source.

5. Each submission under the CO<sub>2</sub> Budget Trading Program shall be submitted, signed, and certified by the CO<sub>2</sub> authorized account representative for each CO<sub>2</sub> budget source on behalf of which the submission is made. Each such submission shall include the following certification statement by the CO<sub>2</sub> authorized account representative: "I am authorized to make this submission on behalf of the owners and operators of the CO<sub>2</sub> budget sources or CO<sub>2</sub> budget units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment."

6. The Department or its agent shall accept or act on a submission made on behalf of owners or operators of a CO<sub>2</sub> budget source or a CO<sub>2</sub> budget unit only if the submission has been made, signed, and certified in accordance with 310 CMR 7.70(2)(a)5.

(b) Alternate CO<sub>2</sub> authorized account representative.

1. An account certificate of representation may designate one and only one alternate CO<sub>2</sub> authorized account representative who may act on behalf of the CO<sub>2</sub> authorized account representative. The agreement by which the alternate CO<sub>2</sub> authorized account representative is selected shall include a procedure for authorizing the alternate CO<sub>2</sub> authorized account representative to act in lieu of the CO<sub>2</sub> authorized account representative.

2. Upon receipt by the Department or its agent of a complete account certificate of representation under 310 CMR 7.70(2)(d), any representation, action, inaction, or submission by the alternate CO<sub>2</sub> authorized account representative shall be deemed to be a representation, action, inaction, or submission by the CO<sub>2</sub> authorized account representative.

3. Except in 310 CMR 7.70(2)(b) and 310 CMR 7.70(2)(a)1., (2)(c), (2)(d), and (6)(b), whenever the term "CO<sub>2</sub> authorized account representative" is used in 310 CMR 7.70, the term shall be construed to include the alternate CO<sub>2</sub> authorized account representative.

(c) Changing the CO<sub>2</sub> authorized account representative and the alternate CO<sub>2</sub> authorized account representative; changes in the owners and operators.

1. Changing the CO<sub>2</sub> authorized account representative. The CO<sub>2</sub> authorized account representative may be changed at any time upon receipt by the Department or its agent of a superseding complete account certificate of representation under 310 CMR 7.70(2)(d). Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative prior to the time and date when the Department or its agent receives the superseding account certificate of representation shall be binding on the new CO<sub>2</sub> authorized account representative and the owners and operators of the CO<sub>2</sub> budget source and the CO<sub>2</sub> budget units at the source.

2. Changing the alternate CO<sub>2</sub> authorized account representative. The alternate CO<sub>2</sub> authorized account representative may be changed at any time upon receipt by the Department or its agent of a superseding complete account certificate of representation under 310 CMR 7.70(2)(d). Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative prior to the time and date when the Department or its agent receives the superseding account certificate of representation shall be binding on the new alternate CO<sub>2</sub> authorized account representative and the owners and operators of the CO<sub>2</sub> budget source and the CO<sub>2</sub> budget units at the source.
  3. Changes in the owners and operators.
    - a. In the event a new owner or operator of a CO<sub>2</sub> budget source or a CO<sub>2</sub> budget unit is not included in the list of owners and operators submitted in the account certificate of representation, such new owner or operator shall be deemed to be subject to and bound by the account certificate of representation, the representations, actions, inactions, and submissions of the CO<sub>2</sub> authorized account representative and any alternate CO<sub>2</sub> authorized account representative of the source or unit, and the decisions, orders, actions, and inactions of the Department, as if the new owner or operator were included in such list.
    - b. Within 30 days following any change in the owners and operators of a CO<sub>2</sub> budget source or a CO<sub>2</sub> budget unit, including the addition of a new owner or operator, the CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative shall submit a revision to the account certificate of representation amending the list of owners and operators to include the change.
- (d) Account certificate of representation.
1. A complete account certificate of representation for a CO<sub>2</sub> authorized account representative or an alternate CO<sub>2</sub> authorized account representative shall include the following elements in a format prescribed by the Department or its agent:
    - a. Identification of the CO<sub>2</sub> budget source and each CO<sub>2</sub> budget unit at the source for which the account certificate of representation is submitted;
    - b. The name, address, email address, telephone number, and facsimile transmission number of the CO<sub>2</sub> authorized account representative and any alternate CO<sub>2</sub> authorized account representative;
    - c. A list of the owners and operators of the CO<sub>2</sub> budget source and of each CO<sub>2</sub> budget unit at the source;
    - d. The following certification statement by the CO<sub>2</sub> authorized account representative and any alternate CO<sub>2</sub> authorized account representative: "I certify that I was selected as the CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative, as applicable, by an agreement binding on the owners and operators of the CO<sub>2</sub> budget source and each CO<sub>2</sub> budget unit at the source. I certify that I have all the necessary authority to carry out my duties and responsibilities under the CO<sub>2</sub> Budget Trading Program on behalf of the owners and operators of the CO<sub>2</sub> budget source and of each CO<sub>2</sub> budget unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions and by any decision or order issued to me by the Department or a court regarding the source or unit."; and,
    - e. The signature of the CO<sub>2</sub> authorized account representative and any alternate CO<sub>2</sub> authorized account representative and the dates signed.

2. Unless otherwise required by the Department or its agent, documents of agreement referred to in the account certificate of representation shall not be submitted to the Department or its agent. Neither the Department nor its agent shall be under any obligation to review or evaluate the sufficiency of such documents, whether or not submitted.

(e) Objections concerning the CO<sub>2</sub> authorized account representative.

1. Once a complete account certificate of representation under 310 CMR 7.70(2)(d) has been submitted and received, the Department and its agent shall rely on the account certificate of representation unless and until the Department or its agent receives a superseding complete account certificate of representation under 310 CMR 7.70(2)(d).

2. Except as provided in 310 CMR 7.70(2)(c)1. or 2., no objection or other communication submitted to the Department or its agent concerning the authorization, or any representation, action, inaction, or submission of the CO<sub>2</sub> authorized account representative shall affect any representation, action, inaction, or submission of the CO<sub>2</sub> authorized account representative or the finality of any decision or order by the Department or its agent under the CO<sub>2</sub> Budget Trading Program.

3. Neither the Department nor its agent shall adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of any CO<sub>2</sub> authorized account representative, including private legal disputes concerning the proceeds of CO<sub>2</sub> allowance transfers.

(f) Delegation by CO<sub>2</sub> authorized account representative and alternate CO<sub>2</sub> authorized account representative.

1. A CO<sub>2</sub> authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Department or its agent under 310 CMR 7.70.

2. An alternate CO<sub>2</sub> authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Department or its agent under 310 CMR 7.70.

3. In order to delegate authority to make an electronic submission to the Department or its agent in accordance with 310 CMR 7.70(2)(f)1. and 2., the CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative, as appropriate, shall submit to the Department or its agent a notice of delegation, in a format prescribed by the Department that includes the following elements:

a. The name, address, email address, telephone number, and facsimile transmission number of such CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative;

b. The name, address, email address, telephone number and facsimile transmission number of each such natural person, herein referred to as the “electronic submission agent”;

c. For each such natural person, a list of the type of electronic submissions under 310 CMR 7.70(2)(f)1. and 2. for which authority is delegated to him or her; and,

d. The following certification statements by such CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative:

i. “I agree that any electronic submission to the Department or its agent that is by a natural person identified in this notice of delegation and of a type listed for such electronic submission agent in this notice of delegation and that is made when I am a CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub>

authorized account representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 310 CMR 7.70(2)(f)4. shall be deemed to be an electronic submission by me.”

ii. “Until this notice of delegation is superseded by another notice of delegation under 310 CMR 7.70(2)(f)4., I agree to maintain an email account and to notify the Department or its agent immediately of any change in my email address unless all delegation authority by me under 310 CMR 7.70(2)(f) is terminated.”

4. A notice of delegation submitted under 310 CMR 7.70(2)(f)3. shall be effective, with regard to the CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative identified in such notice, upon receipt of such notice by the Department or its agent and until receipt by the Department or its agent of a superseding notice of delegation by such CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative as appropriate. The superseding notice of delegation may replace any previously identified electronic submission agent, add a new electronic submission agent, or eliminate entirely any delegation of authority.

5. Any electronic submission covered by the certification in 310 CMR 7.70(2)(f)3.d.i. and made in accordance with a notice of delegation effective under 310 CMR 7.70(2)(f)4. shall be deemed to be an electronic submission by the CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative submitting such notice of delegation.

(3) CO<sub>2</sub> Budget Emission Control Plan Requirements.

(a) General CO<sub>2</sub> budget emission control plan requirements. Each CO<sub>2</sub> budget source shall have an approved CO<sub>2</sub> budget emission control plan issued by the Department pursuant to 310 CMR 7.70(1)(e)1. that contains all applicable CO<sub>2</sub> Budget Trading Program requirements under 310 CMR 7.70(3)(c). CO<sub>2</sub> budget sources shall comply with the approved CO<sub>2</sub> budget emission control plan.

(b) Submission of CO<sub>2</sub> budget emission control plan. For any CO<sub>2</sub> budget source, the CO<sub>2</sub> authorized account representative shall submit a complete CO<sub>2</sub> budget emission control plan under 310 CMR 7.70(3)(c) covering such CO<sub>2</sub> budget source to the Department on or before August 1, 2008 or 12 months before the date on which the CO<sub>2</sub> budget source, or a new unit at the source, commences operation, whichever is later.

(c) CO<sub>2</sub> budget emission control plan contents. A complete CO<sub>2</sub> budget emission control plan shall include the following elements concerning the CO<sub>2</sub> budget source in a format prescribed by the Department:

1. Identification of the CO<sub>2</sub> budget source, including plant name and the ORIS (Office of Regulatory Information Systems) or facility code assigned to the source by the Energy Information Administration of the United States Department of Energy, if applicable;
2. Identification of each CO<sub>2</sub> budget unit at the CO<sub>2</sub> budget source;
3. A compliance account identification number for each CO<sub>2</sub> budget source;
4. For CO<sub>2</sub> budget sources subject to 40 CFR Part 72, a statement that the CO<sub>2</sub> budget unit has a monitoring plan in place that meets the requirements of 310 CMR 7.70(8). Any modification to a CO<sub>2</sub> budget unit’s monitoring methodology approved pursuant to the requirements of 40 CFR Part 72, and meeting the requirements of 310 CMR 7.70(8), are hereby incorporated into the approved emission control plan under 310 CMR 7.70;

5. For CO<sub>2</sub> budget sources not subject to 40 CFR Part 72, a detailed monitoring plan that meets the requirements of 310 CMR 7.70(8);
  6. For CO<sub>2</sub> budget sources that have an approved output monitoring plan pursuant to 310 CMR 7.28 or 310 CMR 7.32, a statement that the CO<sub>2</sub> budget sources have an output monitoring plan that meets the requirements in 310 CMR 7.70(8);
  7. For CO<sub>2</sub> budget sources that do not have an approved output monitoring plan pursuant to 310 CMR 7.28 or 310 CMR 7.32, a detailed output monitoring plan that meets the requirements of 310 CMR 7.70(8);
  8. The standard requirements under 310 CMR 7.70(1)(e); and,
  9. Any other information requested by the Department.
- (d) Approval of emission control plans. After reviewing the proposed emissions control plan, the Department shall:
1. Issue a proposed disapproval of the emission control plan, a proposed approval of the emissions control plan, or a proposed approval of the emission control plan with conditions, based on whether the emission control plan as submitted meets the requirements of 310 CMR 7.70;
  2. Notify the public of the Department's proposed action by publishing a notice in the Environmental Monitor;
  3. Make available on its website all related materials;
  4. Allow not less than 21 days for public comment;
  5. Make all comments available for public inspection; and,
  6. Notify the applicant and publish on the ~~MassDEP~~ Department's website the final approval of the emission control plan, the final approval of the emission control plan with conditions, or a disapproval of the emission control plan.
- (e) Emission control plan approvals issued to a CO<sub>2</sub> budget source that changes ownership are binding upon the new owner.
- (f) Revisions to CO<sub>2</sub> budget emission control plans.
1. At any time, the Department may require a CO<sub>2</sub> budget source to submit a revision to its CO<sub>2</sub> budget emission control plan.
  2. If the CO<sub>2</sub> budget source required to submit a detailed monitoring plan pursuant to 310 CMR 7.70(3)(c)5. or 7. proposes a change in the monitoring methodology, then that CO<sub>2</sub> budget source shall submit a revised monitoring plan to the Department and obtain approval by the Department prior to making the modification. The Department will modify the emission control plan upon approval of the revised monitoring plan.
  3. At any time, a CO<sub>2</sub> budget source may propose a change to its CO<sub>2</sub> budget emissions control plan.
- (g) Operating Permits. If the CO<sub>2</sub> budget source is required to have an Operating Permit under 310 CMR 7.00: Appendix C, such Operating Permit shall be modified in accordance with the procedures in 310 CMR 7.00: Appendix C(8).
- (4) Compliance Certification.
- (a) Compliance certification report.
1. Applicability and deadline. For each control period in which a CO<sub>2</sub> budget source is subject to the CO<sub>2</sub> requirements of 310 CMR 7.70(1)(e)3., the CO<sub>2</sub> authorized account representative of the source shall submit to the Department by the March 1 following the relevant control period, a compliance certification report.



2. Contents of report. The CO<sub>2</sub> authorized account representative shall include in the compliance certification report under 310 CMR 7.70(4)(a)1. the following elements, in a format prescribed by the Department:
    - a. Identification of the source and each CO<sub>2</sub> budget unit at the source;
    - b. At the CO<sub>2</sub> authorized account representative's option, the serial numbers of the CO<sub>2</sub> allowances that are to be deducted from the source's compliance account under 310 CMR 7.70(6)(e) for the control period, including the serial numbers of any CO<sub>2</sub> offset allowances that are to be deducted subject to the limitations of 310 CMR 7.70(6)(e)1.c.; and
    - c. The compliance certification under 310 CMR 7.70(4)(a)3.
  3. Compliance certification. In the compliance certification report under 310 CMR 7.70(4)(a)1., the CO<sub>2</sub> authorized account representative shall certify, based on reasonable inquiry of those persons with primary responsibility for operating the source and the CO<sub>2</sub> budget units at the source in compliance with the CO<sub>2</sub> Budget Trading Program, whether the source and each CO<sub>2</sub> budget unit at the source for which the compliance certification is submitted was operated during the calendar years covered by the report in compliance with the requirements of the CO<sub>2</sub> Budget Trading Program, including:
    - a. Whether the source was operated in compliance with the CO<sub>2</sub> ~~budget emissions limitation requirements of 310 CMR 7.70(1)(e)3.~~;
    - b. Whether the monitoring plan applicable to each unit at the source has been maintained to reflect the actual operation and monitoring of the unit, and contains all information necessary to attribute CO<sub>2</sub> emissions to the unit, in accordance with 310 CMR 7.70(8);
    - c. Whether all the CO<sub>2</sub> emissions from the units at the source were monitored or accounted for through the missing data procedures and reported in the quarterly monitoring reports, including whether conditional data were reported in the quarterly reports in accordance with 310 CMR 7.70(8). If conditional data were reported, the owner or operator shall indicate whether the status of all conditional data has been resolved and all necessary quarterly report resubmissions have been made;
    - d. Whether the facts that form the basis for certification under 310 CMR 7.70(8) of each monitor at each unit at the source, or for using an excepted monitoring method or alternative monitoring method approved under 310 CMR 7.70(8), if any, have changed; and,
    - e. If a change is required to be reported under 310 CMR 7.70(4)(a)3.d., specify the nature of the change, the reason for the change, when the change occurred, and how the unit's compliance status was determined subsequent to the change, including what method was used to determine emissions when a change mandated the need for monitor recertification.
- (b) Department's action on compliance certifications.
1. The Department or its agent may review and conduct independent audits concerning any compliance certification or any other submission under the CO<sub>2</sub> Budget Trading Program and make appropriate adjustments to the information in the compliance certifications or other submissions.
  2. The Department or its agent may deduct CO<sub>2</sub> allowances from or transfer CO<sub>2</sub> allowances to a source's compliance account based on the information in the compliance certifications or other submissions, as adjusted under 310 CMR 7.70(4)(b)1.

(5) CO<sub>2</sub> Allowance Allocations.

(a) Massachusetts CO<sub>2</sub> Budget Trading Program base budget.

1. For the 2009 through 2014 allocation years, the Massachusetts CO<sub>2</sub> Budget Trading Program annual base budget is 26,660,204 tons.
2. For the 2015 allocation year, the Massachusetts CO<sub>2</sub> Budget Trading Program annual base budget is 25,993,699 tons.
3. For the 2016 allocation year, the Massachusetts CO<sub>2</sub> Budget Trading Program annual base budget is 25,327,194 tons.
4. For the 2017 allocation year, the Massachusetts CO<sub>2</sub> Budget Trading Program annual base budget is 24,660,689 tons.
5. For the 2018 allocation year and each succeeding allocation year, the Massachusetts CO<sub>2</sub> Budget Trading Program annual base budget is 23,994,184 tons.

(b) Timing requirements for CO<sub>2</sub> allowance allocations.

1. On or before January 1, 2009, the Department shall allocate CO<sub>2</sub> allowances under 310 CMR 7.70(5)(c)1.a., and ~~b.c.~~ for the 2009, 2010, 2011, and 2012 allocation years.
2. On or before January 1, 2010 and January 1 of each year thereafter, the Department shall allocate CO<sub>2</sub> allowances under 310 CMR 7.70(5)(c)1.a. ~~and c.~~ for the allocation year that commences in the year that is three years after the applicable deadline for allocation under 310 CMR 7.70(5)(b)2.
3. On or before January 1, 2011 and January 1 of each year thereafter, the Department shall allocate CO<sub>2</sub> allowances under 310 CMR 7.70(5)(c)1.b. for the allocation year that commences in the year that is three years after the applicable deadline for allocation under 310 CMR 7.70(5)(b)3.
4. On or after December 31, 2013, any remaining CO<sub>2</sub> allowances in the Greenhouse Gas Credit Exchange Set-aside shall be allocated to the Massachusetts Auction Account.

(c) CO<sub>2</sub> allowance allocations.

1. General allocations.

a. Greenhouse Gas Credit Exchange Set-aside.

- i. The Department shall establish a Greenhouse Gas Credit Exchange Set-aside.
- ii. The Department shall allocate to the Greenhouse Gas Credit Exchange Set-aside a sufficient number of CO<sub>2</sub> allowances from the Massachusetts CO<sub>2</sub> Budget Trading Program annual base budget, as set forth in 310 CMR 7.70(5)(a), to enable the Department to allocate CO<sub>2</sub> allowances pursuant to 310 CMR 7.00: Appendix B(7)(h).

b. Voluntary Renewable Energy (VRE) Account.

- i. The Department shall establish a retirement account to address the voluntary purchase of Massachusetts RPS-eligible Renewable Energy Certificates by retail customers in Massachusetts. CO<sub>2</sub> allowances transferred into this account cannot be removed, unless they are transferred in error.
- ii. Beginning in 2010, the Massachusetts Division of Energy Resources will submit to the Department a report, certified by the Massachusetts Division of Energy Resources, documenting:
  - (i) The number of Massachusetts RPS-eligible Renewable Energy Certificates purchased voluntarily by retail customers in Massachusetts in the preceding year, in MWh;

- (ii) The annual average marginal CO<sub>2</sub> emission rate for electricity generation, in lbs. CO<sub>2</sub>/MWh as provided in the most recently available version of the Marginal Emission Rate Analysis published annually by the Independent System Operator of New England;
  - (iii) The total number of CO<sub>2</sub> allowances to be retired for such voluntary purchases in Massachusetts of said Massachusetts RPS-eligible Renewable Energy Certificates; and,
  - (iv) All calculations used to determine the amount referenced in 310 CMR 7.70(5)(c)1.b.ii.(iii).
- iii. After review of the certified report submitted to the Department pursuant to 310 CMR 7.70(5)(c)1.b.ii., the Department will allocate to the VRE Account the number of CO<sub>2</sub> allowances reported pursuant to 310 CMR 7.70(5)(c)1.b.ii., or 200,000 CO<sub>2</sub> allowances, whichever is fewer.
- iv. The Department will periodically review provisions related to the VRE Account in consultation with the Division of Energy Resources.
- c. Massachusetts Auction Account.
  - i. The Department shall establish a Massachusetts Auction Account.
  - ii. The Department shall allocate all CO<sub>2</sub> allowances not allocated under 310 CMR 7.70(5)(c)1.a. or b. to the Massachusetts Auction Account.
- d. On or after December 31, 2013, any remaining CO<sub>2</sub> allowances in the Greenhouse Gas Credit Exchange Set-aside shall be allocated to the Massachusetts Auction Account.
- 2. Early Reduction CO<sub>2</sub> Allowances. The Department may award Early Reduction CO<sub>2</sub> Allowances (ERAs) to a CO<sub>2</sub> budget source for reductions in the CO<sub>2</sub> budget source's CO<sub>2</sub> emissions (inclusive of all emissions from CO<sub>2</sub> budget units at the CO<sub>2</sub> budget source) that are achieved by the source during the early reduction period (2006, 2007, and 2008), subject to the requirements of 310 CMR 7.70(5)(c)2. Total facility shutdowns shall not be eligible for ERAs.
  - a. To be eligible to receive ERAs, the CO<sub>2</sub> budget authorized account representative shall submit an application for the award of ERAs on or before May 1, 2009. ~~A list of all CO<sub>2</sub> budget units that existed at the source during the early R period (2003, 2004, and 2005).~~
  - b. The Early Reduction CO<sub>2</sub> Allowance Application shall include:
    - i. A list of all CO<sub>2</sub> budget units that existed at the source during the baseline period (2003, 2004, and 2005);
    - ii. A list of all CO<sub>2</sub> budget units that existed at the source during the early reduction period (2006, 2007, and 2008);
    - iii. Completed calculations under 310 CMR 7.70(5)(c)2.c. that include, for the baseline period and the early reduction period, all units that existed at any time during the baseline period and the early reduction period;
    - iv. All information necessary to calculate the number of ERAs to be awarded to a particular CO<sub>2</sub> budget source for the early reduction period pursuant to 310 CMR 7.70(5)(c)2.c.;
    - v. A demonstration that the data submitted in support of the ERA application is consistent with 310 CMR 7.70(8) for all of the baseline years and the early reduction years, or a petition to the Department for the use of an alternative data source or sources for the calculation of Early Reduction CO<sub>2</sub> Allowances;
    - vi. The following certification statement signed by the CO<sub>2</sub> authorized account representative: "I am authorized to make this submission on behalf of

the persons having an ownership interest with respect to the CO<sub>2</sub> allowances held in the general account. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

c. The number of ERAs to be awarded to a particular CO<sub>2</sub> budget source for the early reduction period shall be calculated pursuant to the following methodology:

i. If total heat input to all CO<sub>2</sub> budget units at the CO<sub>2</sub> budget source during the early reduction period is less than or equal to the total heat input to all the CO<sub>2</sub> budget units at the CO<sub>2</sub> budget source during the baseline period, then:

(i) ERAs shall be calculated as follows:

$$\text{ERAs} = ((\text{AEER}_{\text{BASELINE}} - \text{AEER}_{\text{ERP}}) \times (\text{EO}_{\text{ERP}} + (\text{TO}_{\text{ERP}}/3.413)))/2000$$

where:

“AEER<sub>BASELINE</sub>” is the average CO<sub>2</sub> emissions rate resulting from electric energy output and thermal energy output during the baseline period for all of the CO<sub>2</sub> budget units at the CO<sub>2</sub> budget source (in pounds of CO<sub>2</sub>/MWh<sub>th+e</sub>);

“AEER<sub>ERP</sub>” is the average CO<sub>2</sub> emissions rate resulting from electric energy output and thermal energy output during the early reduction period for all of the CO<sub>2</sub> budget units at the CO<sub>2</sub> budget source (in pounds of CO<sub>2</sub>/MWh<sub>th+e</sub>);

“EO<sub>ERP</sub>” is the total electric energy output during the early reduction period from all CO<sub>2</sub> budget units at the CO<sub>2</sub> budget source (in MWh<sub>e</sub>); and,

“TO<sub>ERP</sub>” is the total useful thermal energy output during the early reduction period from all CO<sub>2</sub> budget units at the CO<sub>2</sub> budget source (in MMBtu).

(ii) For the purposes of 310 CMR 7.70(5)(c)2., thermal energy output shall be converted to units of MWh by the conversion factor 1 MWh = 3.413 MMBtu.

(iii) For the purposes of 310 CMR 7.70(5)(c)2., output shall be monitored in accordance with 310 CMR 7.70(8).

ii. If total heat input to all CO<sub>2</sub> budget units at the CO<sub>2</sub> budget source during the early reduction period is greater than or equal to the total heat input to all the CO<sub>2</sub> budget units at the CO<sub>2</sub> budget source during the baseline period, then:

$$\text{ERAs} = \text{E}_{\text{BASELINE}} - \text{E}_{\text{ERP}}$$

where:

“E<sub>BASELINE</sub>” are total CO<sub>2</sub> emissions during the baseline period from the all of the CO<sub>2</sub> budget units at the CO<sub>2</sub> budget source (in tons); and,

“E<sub>ERP</sub>” are total CO<sub>2</sub> emissions during the early reduction period from the all of the CO<sub>2</sub> budget units at the CO<sub>2</sub> budget source (in tons).

d. Once the Department confirms a CO<sub>2</sub> budget source's early reductions of CO<sub>2</sub> emissions, it shall ~~allocate~~ award the ERAs to the CO<sub>2</sub> budget source's compliance account on or before December 31, 2009.

(6) CO<sub>2</sub> Allowance Tracking System.

(a) CO<sub>2</sub> Allowance Tracking System accounts.

1. Compliance accounts. Consistent with 310 CMR 7.70(6)(b)1., the Department or its agent shall establish one compliance account for each CO<sub>2</sub> budget source. Deductions or transfers of CO<sub>2</sub> allowances pursuant to 310 CMR 7.70(4)(b), (6)(e), (6)(g), or (7) shall be recorded in the compliance accounts in accordance with 310 CMR 7.70(6).
2. General accounts. Consistent with 310 CMR 7.70(6)(b)2., the Department or its agent shall establish, upon request, a general account for any person. Transfers of CO<sub>2</sub> allowances pursuant to 310 CMR 7.70(7) shall be recorded in the general account in accordance with 310 CMR 7.70(6).

(b) Establishment of accounts.

1. Compliance accounts. Upon receipt of a complete account certificate of representation under 310 CMR 7.70(2)(d), the Department or its agent shall establish a compliance account for each CO<sub>2</sub> budget source for which the account certificate of representation was submitted.
2. General accounts.
  - a. Application for general account. Any person may apply to open a general account for the purpose of holding and transferring CO<sub>2</sub> allowances. An application for a general account may designate one and only one CO<sub>2</sub> authorized account representative and one and only one alternate CO<sub>2</sub> authorized account representative who may act on behalf of the CO<sub>2</sub> authorized account representative. The agreement by which the alternate CO<sub>2</sub> authorized account representative is selected shall include a procedure for authorizing the alternate CO<sub>2</sub> authorized account representative to act in lieu of the CO<sub>2</sub> authorized account representative. A complete application for a general account shall be submitted to the Department or its agent and shall include the following elements in a format prescribed by the Department or its agent:
    - i. Name, address, email address, telephone number, and facsimile transmission number of the CO<sub>2</sub> authorized account representative and any alternate CO<sub>2</sub> authorized account representative;
    - ii. At the option of the CO<sub>2</sub> authorized account representative, organization name and type of organization;
    - iii. A list of all persons subject to a binding agreement for the CO<sub>2</sub> authorized account representative or any alternate CO<sub>2</sub> authorized account representative to represent their ownership interest with respect to the CO<sub>2</sub> allowances held in the general account;
    - iv. The following certification statement by the CO<sub>2</sub> authorized account representative and any alternate CO<sub>2</sub> authorized account representative: "I certify that I was selected as the CO<sub>2</sub> authorized account representative or the CO<sub>2</sub> alternate authorized account representative, as applicable, by an agreement that is binding on all persons who have an ownership interest with respect to CO<sub>2</sub> allowances held in the general account. I certify that I have all the necessary authority to carry out my duties and responsibilities under the CO<sub>2</sub> Budget Trading Program on behalf of such persons and that each such

person shall be fully bound by my representations, actions, inactions, or submissions and by any order or decision issued to me by the Department or its agent or a court regarding the general account.”;

v. The signature of the CO<sub>2</sub> authorized account representative and any alternate CO<sub>2</sub> authorized account representative and the dates signed; and,

vi. Unless otherwise required by the Department or its agent, documents of agreement referred to in the application for a general account shall not be submitted to the Department or its agent. Neither the Department nor its agent shall be under any obligation to review or evaluate the sufficiency of such documents, whether or not submitted.

b. Authorization of CO<sub>2</sub> authorized account representative.

i. Upon receipt by the Department or its agent of a complete application for a general account under 310 CMR 7.70(6)(b)2.a.:

(i) The Department or its agent shall establish a general account for the person or persons for whom the application is submitted.

(ii) The CO<sub>2</sub> authorized account representative and any alternate CO<sub>2</sub> authorized account representative for the general account shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each person who has an ownership interest with respect to CO<sub>2</sub> allowances held in the general account in all matters pertaining to the CO<sub>2</sub> Budget Trading Program, notwithstanding any agreement between the CO<sub>2</sub> authorized account representative or any alternate CO<sub>2</sub> authorized account representative and such person. Any such person shall be bound by any order or decision issued to the CO<sub>2</sub> authorized account representative or any alternate CO<sub>2</sub> authorized account representative by the Department or its agent or a court regarding the general account.

(iii) Any representation, action, inaction, or submission by any alternate CO<sub>2</sub> authorized account representative shall be deemed to be a representation, action, inaction, or submission by the CO<sub>2</sub> authorized account representative.

ii. Each submission concerning the general account shall be submitted, signed, and certified by the CO<sub>2</sub> authorized account representative or any alternate CO<sub>2</sub> authorized account representative for the persons having an ownership interest with respect to CO<sub>2</sub> allowances held in the general account. Each such submission shall include the following certification statement by the CO<sub>2</sub> authorized account representative or any alternate CO<sub>2</sub> authorized account representative: “I am authorized to make this submission on behalf of the persons having an ownership interest with respect to the CO<sub>2</sub> allowances held in the general account. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

- iii. The Department or its agent shall accept or act on a submission concerning the general account only if the submission has been made, signed, and certified in accordance with 310 CMR 7.70(6)(b)2.b.ii.
- c. Changing CO<sub>2</sub> authorized account representative and alternate CO<sub>2</sub> authorized account representative; changes in persons with ownership interest.
  - i. The CO<sub>2</sub> authorized account representative for a general account may be changed at any time upon receipt by the Department or its agent of a superseding complete application for a general account under 310 CMR 7.70(6)(b)2.a. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CO<sub>2</sub> authorized account representative, or the previous alternate CO<sub>2</sub> authorized account representative, prior to the time and date when the Department or its agent receives the superseding application for a general account shall be binding on the new CO<sub>2</sub> authorized account representative and the persons with an ownership interest with respect to the CO<sub>2</sub> allowances in the general account.
  - ii. The alternate CO<sub>2</sub> authorized account representative for a general account may be changed at any time upon receipt by the Department or its agent of a superseding complete application for a general account under 310 CMR 7.70(6)(b)2.a. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CO<sub>2</sub> authorized account representative, or the previous alternate CO<sub>2</sub> authorized account representative, prior to the time and date when the Department or its agent receives the superseding application for a general account shall be binding on the new alternate CO<sub>2</sub> authorized account representative and the persons with an ownership interest with respect to the CO<sub>2</sub> allowances in the general account.
  - iii. In the event a new person having an ownership interest with respect to CO<sub>2</sub> allowances in the general account is not included in the list of such persons in the application for a general account, such new person shall be deemed to be subject to and bound by the application for a general account, the representations, actions, inactions, and submissions of the CO<sub>2</sub> authorized account representative and any alternate CO<sub>2</sub> authorized account representative, and the decisions, orders, actions, and inactions of the Department or its agent, as if the new person were included in such list.
  - iv. Within 30 days following any change in the persons having an ownership interest with respect to CO<sub>2</sub> allowances in the general account, including the addition of persons, the CO<sub>2</sub> authorized account representative or any alternate CO<sub>2</sub> authorized account representative shall submit a revision to the application for a general account amending the list of persons having an ownership interest with respect to the CO<sub>2</sub> allowances in the general account to include the change.
- d. Objections concerning CO<sub>2</sub> authorized account representative.
  - i. Once a complete application for a general account under 310 CMR 7.70(6)(b)2.a. has been submitted and received, the Department or its agent shall rely on the application unless and until a superseding complete application for a general account under 310 CMR 7.70(6)(b)2.a. is received by the Department or its agent.
  - ii. Except as provided in 310 CMR 7.70(6)(b)2.c.i. and ii., no objection or other communication submitted to the Department or its agent concerning the

authorization, or any representation, action, inaction, or submission of the CO<sub>2</sub> authorized account representative or any alternate CO<sub>2</sub> authorized account representative for a general account shall affect any representation, action, inaction, or submission of the CO<sub>2</sub> authorized account representative or any alternate CO<sub>2</sub> authorized account representative or the finality of any decision or order by the Department or its agent under the CO<sub>2</sub> Budget Trading Program.

iii. Neither the Department nor its agent shall adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of the CO<sub>2</sub> authorized account representative or any alternate CO<sub>2</sub> authorized account representative for a general account, including private legal disputes concerning the proceeds of CO<sub>2</sub> allowance transfers.

e. Delegation by CO<sub>2</sub> authorized account representative and alternate CO<sub>2</sub> authorized account representative.

i. A CO<sub>2</sub> authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Department or its agent provided for under 310 CMR 7.70(6) and (7).

ii. An alternate CO<sub>2</sub> authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Department or its agent provided for under 310 CMR 7.70(6) and (7).

iii. In order to delegate authority to make an electronic submission to the Department or its agent in accordance with 310 CMR 7.70(6)(b)2.e.i and ii., the CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative, as appropriate, must submit to the Department or its agent a notice of delegation, in a format prescribed by the Department that includes the following elements:

(i) The name, address, email address, telephone number, and facsimile transmission number of such CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative;

(ii) The name, address, email address, telephone number and facsimile transmission number of each such natural person, herein referred to as “electronic submission agent”;

(iii) For each such natural person, a list of the type of electronic submissions under 310 CMR 7.70(6)(b)2.e.i. or ii.1. or 2.~~1. or 2.~~ for which authority is delegated to him or her; and,

(iv) The following certification statements by such CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative:

-1. “I agree that any electronic submission to the Department or its agent that is by a natural person identified in this notice of delegation and of a type listed for such electronic submission agent in this notice of delegation and that is made when I am a CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 310 CMR 7.70(6)(b)2.e.iv. shall be deemed to be an electronic submission by me.”

-2. “Until this notice of delegation is superseded by another notice of delegation under 310 CMR 7.70(6)(b)2.e.iv., I agree to maintain an email account and to notify the Department or its agent immediately of



any change in my email address unless all delegation authority by me under 310 CMR 7.70(6)(b)2.e. is terminated.”

- iv. A notice of delegation submitted under 310 CMR 7.70(6)(b)2.e.iii. shall be effective, with regard to the CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative identified in such notice, upon receipt of such notice by the Department or its agent and until receipt by the Department or its agent of a superseding notice of delegation by such CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative as appropriate. The superseding notice of delegation may replace any previously identified electronic submission agent, add a new electronic submission agent, or eliminate entirely any delegation of authority.
- v. Any electronic submission covered by the certification in 310 CMR 7.70(6)(b)2.e.iii.(iv)-1. and made in accordance with a notice of delegation effective under 310 CMR 7.70(6)(b)2.e.iv. shall be deemed to be an electronic submission by the CO<sub>2</sub> authorized account representative or alternate CO<sub>2</sub> authorized account representative submitting such notice of delegation.

- 3. Account identification. The Department or its agent shall assign a unique identifying number to each account established under 310 CMR 7.70(6)(b)1. or 2.

(c) CO<sub>2</sub> Allowance Tracking System responsibilities of CO<sub>2</sub> authorized account representative. Following the establishment of a CO<sub>2</sub> Allowance Tracking System account, all submissions to the Department or its agent pertaining to the account, including, but not limited to, submissions concerning the deduction or transfer of CO<sub>2</sub> allowances in the account, shall be made only by the CO<sub>2</sub> authorized account representative for the account.

(d) Recordation of CO<sub>2</sub> allowance allocations.

- 1. On or before January 1, 2009, the Department or its agent shall record in the Massachusetts Auction Account and the GHG Credit Exchange Set-aside the CO<sub>2</sub> allowances for the allocation years of 2009, 2010, 2011, and 2012.
- 2. On or before January 1, 2010 and each January 1 thereafter, the Department or its agent shall record CO<sub>2</sub> allowances in the Massachusetts Auction Account for the allocation year three years in the future.
- 3. On or before January 1, 2011 and January 1 of each year thereafter, the Department or its agent shall record CO<sub>2</sub> allowances allocated pursuant to 310 CMR 7.70(5)(c)1.b. in the Voluntary Renewable Energy (VRE) Account for the allocation year three years in the future.
- 4. On or before December 31, 2009, the Department shall record any ERAs awarded pursuant to 310 CMR 7.70 (5)(c)2. in the CO<sub>2</sub> budget source’s compliance account.
- 5. On or after December 31, 2013, any remaining CO<sub>2</sub> allowances in the Greenhouse Gas Credit Exchange Set-aside shall be transferred to the Massachusetts Auction Account.
- 6. Serial numbers for allocated CO<sub>2</sub> allowances. When allocating CO<sub>2</sub> allowances to, and recording them in, an account, the Department or its agent shall assign each CO<sub>2</sub> allowance a unique identification number that includes digits identifying the year for which the CO<sub>2</sub> allowance is allocated.

(e) Compliance.

- 1. Allowances available for compliance deduction. CO<sub>2</sub> allowances that meet the following criteria are available to be deducted in order for ~~compliance with a CO<sub>2</sub> budget source to comply with the’s CO<sub>2</sub> requirements~~ under 310 CMR 7.70(1)(e)3. for a control period.

- a. The CO<sub>2</sub> allowances, other than CO<sub>2</sub> offset allowances, are of allocation years that fall within a prior control period or the same control period for which the allowances will be deducted.
  - b. The CO<sub>2</sub> allowances are held in the CO<sub>2</sub> budget source's compliance account as of the CO<sub>2</sub> allowance transfer deadline for that control period or are transferred into the compliance account by a CO<sub>2</sub> allowance transfer correctly submitted for recordation under 310 CMR 7.70(7)(a) by the CO<sub>2</sub> allowance transfer deadline for that control period.
  - c. For CO<sub>2</sub> offset allowances, the number of CO<sub>2</sub> offset allowances that are available to be deducted in order for compliance with a CO<sub>2</sub> budget source to comply with the ~~source's~~ CO<sub>2</sub> requirements under ~~of~~ 310 CMR 7.70(1)(e)3. for a control period may not exceed the number of tons representing the following percentages of the CO<sub>2</sub> budget source's CO<sub>2</sub> emissions for that control period, as determined in accordance with 310 CMR 7.70(6) and (8):
    - i. Unless the provisions of 310 CMR 7.70(6)(e)1.c.ii. or iii. apply, 3.3 percent;
    - ii. If the Department determines that there has been a stage one trigger event, 5 percent;
    - iii. If the Department determines that there has been a stage two trigger event, 10 percent.
  - d. The CO<sub>2</sub> allowances are not necessary for deductions for excess emissions for a prior control period under 310 CMR 7.70(6)(e)4.
2. Deductions for compliance. Following the recordation, in accordance with 310 CMR 7.70(7)(b), of CO<sub>2</sub> allowance transfers submitted for recordation in the CO<sub>2</sub> budget source's compliance account by the CO<sub>2</sub> allowance transfer deadline for a control period, the Department or its agent shall deduct CO<sub>2</sub> allowances available under 310 CMR 7.70(6)(e)1. to cover the source's CO<sub>2</sub> emissions (as determined in accordance with 310 CMR 7.70(8)) for the control period, as follows:
- a. Until the amount of CO<sub>2</sub> allowances deducted equals the number of tons of total CO<sub>2</sub> emissions, less any CO<sub>2</sub> emissions attributable to the burning of eligible biomass, determined in accordance with 310 CMR 7.70(8), from all CO<sub>2</sub> budget units at the CO<sub>2</sub> budget source for the control period; or
  - b. If there are insufficient CO<sub>2</sub> allowances to complete the deductions in 310 CMR 7.70(6)(e)2.a., until no more CO<sub>2</sub> allowances available under 310 CMR 7.70(6)(e)1. remain in the compliance account.
  - c. After making the deductions for compliance, the Department or its agent shall notify the CO<sub>2</sub> authorized account representative if it believes that the CO<sub>2</sub> budget source exceeded its CO<sub>2</sub> budget emissions limitation.
3. Identification of available CO<sub>2</sub> allowances by serial number; default compliance deductions.
- a. The CO<sub>2</sub> authorized account representative for a source's compliance account may request that specific CO<sub>2</sub> allowances, identified by serial number, in the compliance account be deducted for emissions or excess emissions for a control period in accordance with 310 CMR 7.70(6)(e)2. or 4. Such identification shall be made in the compliance certification report submitted in accordance with 310 CMR 7.70(4)(a).
  - b. The Department or its agent shall deduct CO<sub>2</sub> allowances for a control period from the CO<sub>2</sub> budget source's compliance account, in the absence of an identification or in the case of a partial identification of available CO<sub>2</sub> allowances

by serial number under 310 CMR 7.70(6)(e)3.a., in the following descending order:

- i. Any CO<sub>2</sub> allowances, other than CO<sub>2</sub> offset allowances, that are available for deduction under 310 CMR 7.70(6)(e)1. and were allocated to the units at the source, in the order of recordation; and then
- ii. Any CO<sub>2</sub> allowances, other than CO<sub>2</sub> offset allowances, that are available for deduction under 310 CMR 7.70(6)(e)1. and were allocated other than to units at the source and transferred and recorded in the compliance account pursuant to 310 CMR 7.70(7), in the order of recordation; and then
- iii. Subject to the relevant compliance deduction limitations under 310 CMR 7.70(6)(e)1.c., any CO<sub>2</sub> offset allowances transferred and recorded in the compliance account pursuant to 310 CMR 7.70(7), in the order of recordation.

4. Deductions for excess emissions.

a. After completing the procedures in 310 CMR 7.70(6)(e)2., the Department or its agent shall deduct from the CO<sub>2</sub> budget source's compliance account a number of CO<sub>2</sub> allowances, from allocation years that occur after the control period in which the source has excess emissions, equal to three times the number of the source's excess emissions. In the event that a source has insufficient CO<sub>2</sub> allowances to cover three times the number of the source's excess emissions, the source shall be required within 14 calendar days of receipt of notice by the Department or its agent to transfer sufficient allowances into its compliance account. No CO<sub>2</sub> offset allowances may be deducted to account for the source's excess emissions.

b. Any CO<sub>2</sub> allowance deduction required under 310 CMR 7.70(6)(e)4.a. shall not affect the liability of the owners and operators of the CO<sub>2</sub> budget source or the CO<sub>2</sub> units at the source for any fine, penalty, or assessment, or their obligation to comply with any other remedy, for the same violation, as ordered under applicable State law. In assessing fines, penalties or other obligations, each ton of excess emissions is a separate violation.

c. The propriety of the Department's determination that a CO<sub>2</sub> budget source had excess emissions and the concomitant deduction of CO<sub>2</sub> allowances from that CO<sub>2</sub> budget source's account may be later challenged in the context of the initial administrative enforcement, or any civil or criminal judicial action, arising from or encompassing that excess emissions violation. The commencement or pendency of any administrative enforcement, or civil or criminal judicial action arising from or encompassing that excess emissions violation, shall not act to prevent the Department or its agent from initially deducting the CO<sub>2</sub> allowances resulting from the Department's original determination that the relevant CO<sub>2</sub> budget source has had excess emissions. Should the Department's determination of the existence or extent of the CO<sub>2</sub> budget source's excess emissions be revised either by a settlement or final conclusion of any administrative or judicial action, the Department shall act as follows.

- i. In any instance where the Department's determination of the extent of excess emissions was too low, the Department shall take further action under 310 CMR 7.70(6)(e)4.a. and b. ~~of 310 CMR 7.70(6)(e)~~ to address the expanded violation.
- ii. In any instance where the Department's determination of the extent of excess emissions was too high, the Department shall distribute to the relevant CO<sub>2</sub> budget source a number of CO<sub>2</sub> allowances equaling the number of CO<sub>2</sub>

allowances deducted which are attributable to the difference between the original and final quantity of excess emissions. Should such CO<sub>2</sub> budget source's compliance account no longer exist, the CO<sub>2</sub> allowances shall be provided to a general account selected by the owner or operator of the CO<sub>2</sub> budget source.

5. The Department or its agent shall record in the appropriate compliance account all deductions from such an account pursuant to 310 CMR 7.70(6)(e)2. and 4.

6. Action by the Department on submissions.

a. The Department may review and conduct independent audits concerning any submission under the CO<sub>2</sub> Budget Trading Program and make appropriate adjustments of the information in the submissions.

b. The Department may deduct CO<sub>2</sub> allowances from or transfer CO<sub>2</sub> allowances to a source's compliance account based on information in the submissions, as adjusted under 310 CMR 7.70(6)(e)6.a.

(f) Banking. Each CO<sub>2</sub> allowance that is held in a compliance account or a general account shall remain in such account unless and until the CO<sub>2</sub> allowance is deducted or transferred under 310 CMR 7.70(4)(b), (6)(e), (6)(g), or (7).

(g) Account error.

1. The Department or its agent may, at its sole discretion and on ~~his or her~~its own motion, correct any error in any CO<sub>2</sub> Allowance Tracking System account. Within 10 business days of making such correction, the Department or its agent shall notify the CO<sub>2</sub> authorized account representative for the account.

2. At any time the CO<sub>2</sub> authorized account representative may notify the Department if it believes that a mistake has been made.

(h) Closing of general accounts.

1. A CO<sub>2</sub> authorized account representative of a general account may instruct the Department or its agent to close the account by submitting a statement requesting deletion of the account from the CO<sub>2</sub> Allowance Tracking System and by correctly submitting for recordation under 310 CMR 7.70(7)(a) a CO<sub>2</sub> allowance transfer of all CO<sub>2</sub> allowances in the account to one or more other CO<sub>2</sub> Allowance Tracking System accounts.

2. If a general account shows no activity for a period of six years or more and does not contain any CO<sub>2</sub> allowances, the Department or its agent may notify the CO<sub>2</sub> authorized account representative for the account that the account shall be closed in the CO<sub>2</sub> Allowance Tracking System 20 business days after the notice is sent. The account shall be closed after the 20-day period unless before the end of the 20-day period the Department or its agent receives a correctly submitted transfer of CO<sub>2</sub> allowances into the account under 310 CMR 7.70(7)(a) or a statement submitted by the CO<sub>2</sub> authorized account representative demonstrating to the satisfaction of the Department or its agent good cause as to why the account should not be closed.

(7) CO<sub>2</sub> Allowance Transfers.

(a) Submission of CO<sub>2</sub> allowance transfers. The CO<sub>2</sub> authorized account representative who is the transferor shall submit the transfer to the Department or its agent. To be considered correctly submitted, the CO<sub>2</sub> allowance transfer shall include the following elements in a format specified by the Department or its agent:

1. The numbers identifying both the transferor and transferee accounts;
2. A specification by serial number of each CO<sub>2</sub> allowance to be transferred;

3. The printed name and signature of the CO<sub>2</sub> authorized account representative of the transferor account and the date signed;
4. The date of the completion of the last sale or purchase transaction for the allowance, if any; and,
5. The purchase or sale price of the allowance that is the subject of a sale or purchase transaction under 310 CMR 7.70(7)(a)4.

(b) Recordation.

1. Within 5 business days of receiving a CO<sub>2</sub> allowance transfer, except as provided in 310 CMR 7.70(7)(b)2., the Department or its agent shall record a CO<sub>2</sub> allowance transfer by moving each CO<sub>2</sub> allowance from the transferor account to the transferee account as specified by the request, provided that:
  - a. The transfer is correctly submitted under 310 CMR 7.70(7)(a); and,
  - b. The transferor account includes each CO<sub>2</sub> allowance identified by serial number in the transfer.
2. A CO<sub>2</sub> allowance transfer into or out of a compliance account that is submitted for recordation following the CO<sub>2</sub> allowance transfer deadline and that includes any CO<sub>2</sub> allowances that are of allocation years that fall within a control period prior to or the same as the control period to which the CO<sub>2</sub> allowance transfer deadline applies shall not be recorded until after completion of the process pursuant to 310 CMR 7.70(6)(e)2.
3. Where a CO<sub>2</sub> allowance transfer submitted for recordation fails to meet the requirements of 310 CMR 7.70(7)(b)1., the Department or its agent shall not record such transfer.

(c) Notification.

1. Notification of recordation. Within 5 business days of recordation of a CO<sub>2</sub> allowance transfer under 310 CMR 7.70(7)(b), the Department or its agent shall notify each party to the transfer. Notice shall be given to the CO<sub>2</sub> authorized account representatives of both the transferor and transferee accounts.
2. Notification of non-recordation. Within 10 business days of receipt of a CO<sub>2</sub> allowance transfer that fails to meet the requirements of 310 CMR 7.70(7)(b)1., the Department or its agent shall notify the CO<sub>2</sub> authorized account representatives of both accounts subject to the transfer of:
  - a. A decision not to record the transfer; and,
  - b. The reasons for such non-recordation.
3. Nothing in 310 CMR 7.70(7) shall preclude the submission of a CO<sub>2</sub> allowance transfer for recordation following notification of non-recordation.

(8) Monitoring and Reporting

- (a) General requirements. The owners and operators, and to the extent applicable, the CO<sub>2</sub> authorized account representative of a CO<sub>2</sub> budget unit, shall comply with the monitoring, recordkeeping and reporting requirements as provided in 310 CMR 7.70(8) and all applicable sections of 40 CFR Part 75. Where referenced in 310 CMR 7.70(8), the monitoring requirements of 40 CFR Part 75 shall be adhered to in a manner consistent with the purpose of monitoring and reporting CO<sub>2</sub> mass emissions pursuant to 310 CMR 7.70. For purposes of complying with such requirements, the definitions in 310 CMR 7.70(1)(b) and in 40 CFR 72.2 shall apply, and the terms “affected unit,” “designated representative,” and “continuous emissions monitoring system” (or “CEMS”) in 40 CFR Part 75 shall be replaced by the terms “CO<sub>2</sub> budget unit,” “CO<sub>2</sub> authorized account representative,” and “continuous emissions monitoring system” (or “CEMS”),

respectively, as defined in 310 CMR 7.70(1)(b). For units not subject to an acid rain emissions limitation, the term “Administrator” in 40 CFR Part 75 shall be replaced with “the Department or its agent.” Owners or operators of a CO<sub>2</sub> budget unit who monitor a non-CO<sub>2</sub> budget unit pursuant to the common, multiple, or bypass stack procedures in 40 CFR 75.72(b)(2)(ii), or 40 CFR 75.16 (b)(2)(ii)(B) as pursuant to 40 CFR 75.13, for purposes of complying with 310 CMR 7.70, shall monitor and report CO<sub>2</sub> mass emissions from such non-CO<sub>2</sub> budget unit according to the procedures for CO<sub>2</sub> budget units established in 310 CMR 7.70(8)(a) through (g).

1. Requirements for installation, certification, and data accounting. The owner or operator of each CO<sub>2</sub> budget unit shall meet the following requirements:
  - a. Install all monitoring systems required under 310 CMR 7.70(8) for necessary to monitoring CO<sub>2</sub> mass emissions in accordance with 40 CFR Part 75, except for equation G-1. Equation G-1 in Appendix G shall not be used to determine CO<sub>2</sub> emissions under 310 CMR 7.70(8). This may require ~~includes all systems required to monitor CO<sub>2</sub> concentration, stack gas flow rate, O<sub>2</sub> concentration, heat input, and fuel flow rate, as applicable, in accordance with 40 CFR 75.13, 75.71 and 75.72 and all portions of appendix G of 40 CFR Part 75, except for equation G1 in 40 CFR Part 75. Equation G1 in Appendix G shall not be used to determine CO<sub>2</sub> emissions under 310 CMR 7.70;~~ This may require includes all systems required to monitor CO<sub>2</sub> concentration, stack gas flow rate, O<sub>2</sub> concentration, heat input, and fuel flow rate, as applicable, in accordance with 40 CFR 75.13, 75.71 and 75.72 and all portions of appendix G of 40 CFR Part 75, except for equation G1 in 40 CFR Part 75. Equation G1 in Appendix G shall not be used to determine CO<sub>2</sub> emissions under 310 CMR 7.70;
  - b. Successfully complete all certification tests required under 310 CMR 7.70(8)(b) and meet all other requirements of 310 CMR 7.70(8) and 40 CFR Part 75 applicable to the monitoring systems under 310 CMR 7.70(8)(a)1.a.; and,
  - c. Record, report and quality-assure the data from the monitoring systems under 310 CMR 7.70(8)(a)1.a.
2. Compliance dates. The owner or operator of a CO<sub>2</sub> budget unit shall meet the monitoring system certification and other requirements of 310 CMR 7.70(8)(a)1.a. through 1.c. on or before the following dates. The owner or operator of a CO<sub>2</sub> budget unit shall record, report and quality-assure the data from the monitoring systems under 310 CMR 7.70(8)(a)1.a. on and after the following dates.
  - a. The owner or operator of a CO<sub>2</sub> budget unit, except for a CO<sub>2</sub> budget unit under 310 CMR 7.70(8)(a)2.b., that commences commercial operation before July 1, 2008, must comply with the requirements of 310 CMR 7.70(8) by January 1, 2009.
  - b. The owner or operator of a CO<sub>2</sub> budget unit that commences commercial operation on or after July 1, 2008 must comply with the requirements of 310 CMR 7.70(8) by the later of the following dates:
    - i. January 1, 2009; or,
    - ii. The earlier of:
      - (i) 90 unit operating days after the date on which the unit commences commercial operation; or,
      - (ii) 180 calendar days after the date on which the unit commences commercial operation.
  - c. For the owner or operator of a CO<sub>2</sub> budget unit for which construction of a new stack or flue installation is completed after the applicable deadline under 310 CMR 7.70(8)(a)2.a. or 2.b. by the earlier of:
    - i. 90 unit operating days after the date on which emissions first exit to the atmosphere through the new stack or flue; or,
    - ii. 180 calendar days after the date on which emissions first exit to the atmosphere through the new stack or flue.

3. Reporting data.

- a. Except as provided in 310 CMR 7.70(8)(a)3.b., the owner or operator of a CO<sub>2</sub> budget unit that does not meet the applicable compliance date set forth in 310 CMR 7.70(8)(a)2.a., 2.b., and 2.c. for any monitoring system under 310 CMR 7.70(8)(a)1.a. shall, for each such monitoring system, determine, record, and report maximum potential (or as appropriate minimum potential) values for CO<sub>2</sub> concentration, CO<sub>2</sub> emissions rate, stack gas moisture content, fuel flow rate and any other parameter required to determine CO<sub>2</sub> mass emissions ~~and heat input~~ in accordance with 40 CFR 75.31(b)(2) or (c)(3), or section 2.4 of Appendix D of 40 CFR Part 75, or section 2.5 of Appendix E of 40 CFR Part 75 as applicable.
- b. The owner or operator of a CO<sub>2</sub> budget unit that does not meet the applicable compliance date set forth in 310 CMR 7.70(8)(a)2.c. for any monitoring system under 310 CMR 7.70(8)(a)1.a. shall, for each such monitoring system, determine, record, and report substitute data using the applicable missing data procedures in Subpart D, or Appendix D ~~or Appendix E~~ of 40 CFR Part 75, in lieu of the maximum potential (or as appropriate minimum potential) values for a parameter if the owner or operator demonstrates that there is continuity between the data streams for that parameter before and after the construction or installation under 310 CMR 7.70(8)(a)2.c.

c. Low mass emissions (LME) units.

- i. CO<sub>2</sub> budget units subject to an acid rain emissions limitation or 310 CMR 7.32 that qualify for the optional SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub> (for acid rain) or NO<sub>x</sub> (for 310 CMR 7.32) emissions calculations for low mass emissions (LME) units under 40 CFR 75.19 and report emissions for such programs using the calculations under 40 CFR 75.19, shall also use the CO<sub>2</sub> emissions calculations for LME units under 40 CFR 75.19 for purposes of compliance with 310 CMR 7.70.
- ii. CO<sub>2</sub> budget units subject to an acid rain emissions limitation or 310 CMR 7.32 that do not qualify for the optional SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub> (for acid rain) or NO<sub>x</sub> (for 310 CMR 7.32) emissions calculations for LME units under 40 CFR 75.19, shall not use the CO<sub>2</sub> emissions calculations for LME units under 40 CFR 75.19 for purposes of compliance with 310 CMR 7.70.
- iii. CO<sub>2</sub> budget units not subject to an acid rain emissions limitation or 310 CMR 7.32 shall qualify for the optional CO<sub>2</sub> emissions calculation for LME units under 40 CFR 75.19, provided that they emit less than 100 tons of NO<sub>x</sub> annually and no more than 25 tons of SO<sub>2</sub> annually.

4. Prohibitions.

- a. No owner or operator of a CO<sub>2</sub> budget unit shall use any alternative monitoring system, alternative reference method, or any other alternative for the required continuous emissions monitoring system without having obtained prior written approval in accordance with 310 CMR 7.70(8)(f).
- b. No owner or operator of a CO<sub>2</sub> budget unit shall operate the unit so as to discharge, or allow to be discharged, CO<sub>2</sub> emissions to the atmosphere without accounting for all such emissions in accordance with the applicable provisions of 310 CMR 7.70(8) and 40 CFR Part 75.
- c. No owner or operator of a CO<sub>2</sub> budget unit shall disrupt the continuous emissions monitoring system, any portion thereof, or any other approved emissions monitoring method, and thereby avoid monitoring and recording CO<sub>2</sub> mass emissions discharged into the atmosphere, except for periods of

recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the applicable provisions of 310 CMR 7.70(8) and 40 CFR Part 75.

d. No owner or operator of a CO<sub>2</sub> budget unit shall retire or permanently discontinue use of the continuous emissions monitoring system, any component thereof, or any other approved emissions monitoring system under 310 CMR 7.70(8), except under any one of the following circumstances:

i. The owner or operator is monitoring emissions from the unit with another certified monitoring system approved, in accordance with the applicable provisions of 310 CMR 7.70(8) and 40 CFR Part 75, by the Department for use at that unit that provides emissions data for the same pollutant or parameter as the retired or discontinued monitoring system; or,

ii. The CO<sub>2</sub> authorized account representative submits notification of the date of certification testing of a replacement monitoring system in accordance with 310 CMR 7.70(8)(b)4.c.i.

(b) Initial certification and recertification procedures.

1. The owner or operator of a CO<sub>2</sub> budget unit shall be exempt from the initial certification requirements of 310 CMR 7.70(8)(b) for a monitoring system under 310 CMR 7.70(8)(a)1.a. if the following conditions are met:

a. The monitoring system has been previously certified in accordance with 40 CFR Part 75; and,

b. The applicable quality assurance and quality-control requirements of 40 CFR 75.21 and appendix B, ~~and appendix D and appendix E~~ of 40 CFR Part 75 are fully met for the certified monitoring system described in 310 CMR 7.70(8)(b)1.a.

2. The recertification provisions of 310 CMR 7.70(8)(b) shall apply to a monitoring system under 310 CMR 7.70(8)(a)1.a. exempt from initial certification requirements under 310 CMR 7.70(8)(b)1.

3. Notwithstanding 310 CMR 7.70(8)(b)1., if the Administrator has previously approved a petition under ~~40 CFR 75.17(a) or (b)~~ 40 CFR 75.72(b)(2)(ii), or 40 CFR 75.16 (b)(2)(ii)(B) as pursuant to 40 CFR 75.13 for apportioning the CO<sub>2</sub> emissions rate measured in a common stack or a petition under 40 CFR 75.66 of this chapter for an alternative requirement in ~~40 CFR 75.12, 40 CFR 75.17 or Subpart H~~ of 40 CFR Part 75, the CO<sub>2</sub> authorized account representative shall submit the petition to the Department under 310 CMR 7.70(8)(f)1. to determine whether the approval applies under this program.

4. Except as provided in 310 CMR 7.70(8)(b)1., the owner or operator of a CO<sub>2</sub> budget unit shall comply with the following initial certification and recertification procedures for a continuous emissions monitoring system and an excepted monitoring system under ~~Appendices D and E~~ of 40 CFR Part 75 and under 310 CMR

7.70(8)(a)1.a. The owner or operator of a unit that qualifies to use the low mass emissions excepted monitoring methodology in 40 CFR 75.19 or that qualifies to use an alternative monitoring system under Subpart E of 40 CFR Part 75 shall comply with the procedures in 310 CMR 7.70(8)(b)5. or 6., respectively.

a. Requirements for initial certification. The owner or operator shall ensure that each continuous emissions monitoring system required under 310 CMR 7.70(8)(a)1.a. (which includes the automated data acquisition and handling system) successfully completes all of the initial certification testing required under 40 CFR 75.20 by the applicable deadlines specified in 310 CMR 7.70(8)(a)2. In addition, whenever the owner or operator installs a monitoring



system in order to meet the requirements of 310 CMR 7.70(8) in a location where no such monitoring system was previously installed, initial certification in accordance with 40 CFR 75.20 is required.

b. Requirements for recertification.

(i) Whenever the owner or operator makes a replacement, modification, or change in a certified continuous emissions monitoring system under 310 CMR 7.70(8)(a)1.a. that the Administrator or the Department determines significantly affects the ability of the system to accurately measure or record CO<sub>2</sub> mass emissions ~~or heat input~~ or to meet the quality-assurance and quality-control requirements of 40 CFR 75.21 or Appendix B to 40 CFR Part 75, the owner or operator shall recertify the monitoring system according to 40 CFR 75.20(b).

(ii) For systems using stack measurements such as stack flow, stack moisture content, or CO<sub>2</sub> or O<sub>2</sub> monitors, ~~W~~ whenever the owner or operator makes a replacement, modification, or change to the flue gas handling system or the unit's operation that the Administrator or the Department determines to significantly change the flow or concentration profile, the owner or operator shall recertify the continuous emissions monitoring system according to 40 CFR 75.20(b). ~~(iii)~~ Examples of changes which require recertification include: replacement of the analyzer, change in location or orientation of the sampling probe or site, or changing of flow rate monitor polynomial coefficients.

c. Approval process for initial certifications and recertification. 310 CMR 7.70(8)(b)4.c.i through iv. apply to both initial certification and recertification of a monitoring system under 310 CMR 7.70(8)(a)1.a. For recertifications, replace the words "certification" and "initial certification" with the word "recertification," replace the word "certified" with "recertified," and ~~follow the procedures in the manner prescribed in~~ 40 CFR 75.20(b)(5) and (g)(7) in lieu of the procedures in 310 CMR 7.70(8)(b)4.c.v.

i. Notification of certification. The CO<sub>2</sub> authorized account representative shall submit to the Department or its agent, the appropriate EPA Regional Office, and the Administrator a written notice of the dates of certification in accordance with 310 CMR 7.70(8)(d).

ii. Certification application. The CO<sub>2</sub> authorized account representative shall submit to the Department or its agent a certification application for each monitoring system. A complete certification application shall include the information specified in 40 CFR 75.63.

iii. Provisional certification data. The provisional certification date for a monitor shall be determined in accordance with 40 CFR 75.20(a)(3). A provisionally certified monitor may be used under the CO<sub>2</sub> Budget Trading Program for a period not to exceed 120 days after receipt by the Department of the complete certification application for the monitoring system or component thereof under 310 CMR 7.70(8)(b)4.c.ii. Data measured and recorded by the provisionally certified monitoring system or component thereof, in accordance with the requirements of 40 CFR Part 75, shall be considered valid quality-assured data (retroactive to the date and time of provisional certification), provided that the Department does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of receipt of the complete certification application by the Department.

iv. Certification application approval process. The Department shall issue a written notice of approval or disapproval of the certification application to the owner or operator within 120 days of receipt of the complete certification application under 310 CMR 7.70(8)(b)4.c.ii. In the event the Department does not issue such a notice within such 120-day period, each monitoring system that meets the applicable performance requirements of 40 CFR Part 75 and is included in the certification application shall be deemed certified for use under the CO<sub>2</sub> Budget Trading Program.

(i) Approval notice. If the certification application is complete and shows that each monitoring system meets the applicable performance requirements of 40 CFR Part 75, then the Department shall issue a written notice of approval of the certification application within 120 days of receipt.

(ii) Incomplete application notice. If the certification application is not complete, then the Department shall issue a written notice of incompleteness that sets a reasonable date by which the CO<sub>2</sub> authorized account representative must submit the additional information required to complete the certification application. If the CO<sub>2</sub> authorized account representative does not comply with the notice of incompleteness by the specified date, then the Department may issue a notice of disapproval under 310 CMR 7.70(8)(b)4.c.iv.(iii). The 120 day review period shall not begin before receipt of a complete certification application

(iii) Disapproval notice. If the certification application shows that any monitoring system or component thereof does not meet the performance requirements of 40 CFR Part 75, or if the certification application is incomplete and the requirement for disapproval under 310 CMR 7.70(8)(b)4.c.iv.(ii) is met, then the Department shall issue a written notice of disapproval of the certification application. Upon issuance of such notice of disapproval, the provisional certification is invalidated by the Department and the data measured and recorded by each uncertified monitoring system or component thereof shall not be considered valid quality assured data beginning with the date and hour of provisional certification. The owner or operator shall follow the procedures for loss of certification in 310 CMR 7.70(8)(b)4.c.v. for each monitoring system, or component thereof, which is disapproved for initial certification.

(iv) Audit decertification. The Department may issue a notice of disapproval of the certification status of a monitor in accordance with 310 CMR 7.70(8)(c)2.

v. Procedures for loss of certification. If the Department issues a notice of disapproval of a certification application under 310 CMR 7.70(8)(b)4.c.iv.(iii) or a notice of disapproval of certification status under 310 CMR 7.70(8)(b)4.c.iv.(iv), then:

(i) The owner or operator shall substitute the following values for each disapproved monitoring system, for each hour of unit operation during the period of invalid data beginning with the date and hour of provisional certification and continuing until the time, date, and hour specified under 40 CFR 75.20(a)(5)(i) or 40 CFR 75.20(g)(7):

-1. For units monitoring, or intending to monitor, for CO<sub>2</sub> mass emissions using heat input or for units using the low mass emissions

excepted methodology under 40 CFR 75.19, the maximum potential hourly heat input of the unit; or,

-2. For units monitoring, or intending to monitor, for CO<sub>2</sub> mass emissions using a CO<sub>2</sub> pollutant concentration monitor and a flow monitor, the maximum potential concentration of CO<sub>2</sub> and the maximum potential flow rate of the unit under section 2.1 of appendix A of 40 CFR Part 75.

(ii) The CO<sub>2</sub> authorized account representative shall submit a notification of certification retest dates and a new certification application in accordance with 310 CMR 7.70(8)(b)4.c.i. and ii.; and

(iii) The owner or operator shall repeat all certification tests or other requirements that were failed by the monitoring system, as indicated in the Department's notice of disapproval, no later than 30 unit operating days after the date of issuance of the notice of disapproval.

5. Initial certification and recertification procedures for low mass emissions units using the excepted methodologies under 40 CFR 75.19~~310 CMR 7.70(8)(a)3.c.~~ The owner or operator of a unit qualified to use the low mass emissions excepted methodology under 310 CMR 7.70(8)(a)3.c.~~40 CFR 75.19~~ shall meet the applicable certification and recertification requirements of 40 CFR 75.19(a)(2), 40 CFR 75.20(h) and 310 CMR 7.70(8)(b). If the owner or operator of such a unit elects to certify a fuel flow meter system for heat input determinations, the owner or operator shall also meet the certification and recertification requirements in 40 CFR 75.20(g).

6. Certification/recertification procedures for alternative monitoring systems. The CO<sub>2</sub> authorized account representative for each unit for which the owner or operator intends to use an alternative monitoring system approved by the Administrator and, if applicable, the Department under Subpart E of 40 CFR Part 75 shall comply with the applicable notification and application procedures of 40 CFR 75.20(f).

(c) Out-of-control periods.

1. Whenever any monitoring system fails to meet the quality assurance and quality control requirements or data validation requirements of 40 CFR Part 75, data shall be substituted using the applicable procedures in Subpart D; or appendix D;~~or appendix E~~ of 40 CFR Part 75.

2. Audit decertification. Whenever both an audit of a monitoring system and a review of the initial certification or recertification application reveal that any monitoring system should not have been certified or recertified because it did not meet a particular performance specification or other requirement under 310 CMR 7.70(8)(b) or the applicable provisions of 40 CFR Part 75, both at the time of the initial certification or recertification application submission and at the time of the audit, the Department or Administrator shall issue a notice of disapproval of the certification status of such monitoring system. For the purposes of this 310 CMR 7.70(8)(c)2., an audit shall be either a field audit or an audit of any information submitted to the Department or the Administrator. By issuing the notice of disapproval, the Department or Administrator revokes prospectively the certification status of the monitoring system. The data measured and recorded by the monitoring system shall not be considered valid quality-assured data from the date of issuance of the notification of the revoked certification status until the date and time that the owner or operator completes subsequently approved initial certification or recertification tests for the monitoring system. The owner or operator shall follow the

initial certification or recertification procedures in 310 CMR 7.70(8)(b) for each disapproved monitoring system.

(d) Notifications. The CO<sub>2</sub> authorized account representative for a CO<sub>2</sub> budget unit shall submit written notice to the Department and the Administrator in accordance with 40 CFR 75.61.

(e) Recordkeeping and reporting.

1. General provisions. The CO<sub>2</sub> authorized account representative shall comply with all recordkeeping and reporting requirements in 310 CMR 7.70(8)(e), the applicable record keeping and reporting requirements under 40 CFR 75.73 and with the requirements of 310 CMR 7.70(2)(a)5.

2. Monitoring plans. The owner or operator of a CO<sub>2</sub> budget unit required to submit a monitoring plan shall submit such monitoring plan in the manner prescribed in ~~comply with requirements of~~ 40 CFR 75.62.

3. Certification applications. The CO<sub>2</sub> authorized account representative shall submit an application to the Department within 45 days after completing all CO<sub>2</sub> monitoring system initial certification or recertification tests required under 310 CMR 7.70(8)(b) including the information required under 40 CFR 75.63 and 40 CFR 75.73 ~~(e) and (e) 75.53(e) and (f)~~.

4. Quarterly reports. The CO<sub>2</sub> authorized account representative shall submit quarterly reports, as follows:

a. The CO<sub>2</sub> authorized account representative shall report the CO<sub>2</sub> mass emissions data ~~and heat input data~~ for the CO<sub>2</sub> budget unit, in an electronic format prescribed by the Administrator, unless otherwise ~~pre~~scribed by the Department, for each calendar quarter beginning with:

- i. For a unit that commences commercial operation before July 1, 2008, the calendar quarter covering January 1, 2009 through March 31, 2009; or
- ii. For a unit commencing commercial operation on or after July 1, 2008, the calendar quarter corresponding to the earlier of the date of provisional certification or the applicable deadline for initial certification under 310 CMR 7.70(8)(a)2. or, unless that quarter is the third or fourth quarter of 2008, in which case reporting shall commence in the quarter covering January 1, 2009 through March 31, 2009.

b. The CO<sub>2</sub> authorized account representative shall submit each quarterly report to the Department's agent within 30 days following the end of the calendar quarter covered by the report. Quarterly reports shall be submitted in the manner specified in Subpart H of 40 CFR Part 75 and 40 CFR 75.64. Quarterly reports shall be submitted for each CO<sub>2</sub> budget unit (or group of units using a common stack), and shall include all of the data and information required in Subpart H of 40 CFR Part 75 for each CO<sub>2</sub> budget unit (or group of units using a common stack) as well as information required in Subpart G of 40 CFR Part 75, except for opacity, NO<sub>x</sub> and SO<sub>2</sub> provisions.

c. Compliance certification. The CO<sub>2</sub> authorized account representative shall submit to the Department or its agent a compliance certification in support of each quarterly report based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the unit's emissions are correctly and fully monitored. The certification shall state that:

- i. The monitoring data submitted were recorded in accordance with the applicable requirements of 310 CMR 7.70(8) and 40 CFR Part 75, including the quality assurance procedures and specifications;

- ii. For a unit with add-on CO<sub>2</sub> emissions controls and for all hours where data are substituted in accordance with 40 CFR 75.34(a)(1), the add-on emissions controls were operating within the range of parameters listed in the quality assurance/quality control program under appendix B of 40 CFR Part 75 and the substitute values do not systematically underestimate CO<sub>2</sub> emissions; and,
- iii. The CO<sub>2</sub> concentration values substituted for missing data under Subpart D of 40 CFR Part 75 do not systematically underestimate CO<sub>2</sub> emissions.

(f) Petitions.

1. Except as provided in 310 CMR 7.70(8)(f)3., the CO<sub>2</sub> authorized account representative of a CO<sub>2</sub> budget unit that is subject to an Acid Rain emissions limitation may submit a petition to the Administrator under 40 CFR 75.66 and to the Administrator-Department requesting approval to apply an alternative to any requirement of 310 CMR 7.70(8). Application of an alternative to any requirement of ~~310 CMR 7.70(8)~~ 40 CFR Part 75 is in accordance with 310 CMR 7.70(8) only to the extent that the petition is approved in writing by the Administrator, ~~in consultation with the Department, and subsequently approved in writing by the Department.~~
2. Petitions for a CO<sub>2</sub> budget unit that is not subject to an Acid Rain emissions limitation.
  - a. The CO<sub>2</sub> authorized account representative of a CO<sub>2</sub> budget unit that is not subject to an Acid Rain emissions limitation may submit a petition to the Administrator under 40 CFR 75.66 and to the Administrator-Department requesting approval to apply an alternative to any requirement of ~~40 CFR Part 75~~ 310 CMR 7.70(8). Application of an alternative to any requirement of ~~40 CFR Part 75~~ 310 CMR 7.70(8) is in accordance with 310 CMR 7.70(8) only to the extent that the petition is approved in writing by ~~both the Department and the Administrator, and subsequently approved in writing by the Department.~~
  - b. In the event that the Administrator declines to review a petition under 310 CMR 7.70(8)(f)2.a., the CO<sub>2</sub> authorized account representative of a CO<sub>2</sub> budget unit that is not subject to an Acid Rain emissions limitation may submit a petition to the Department requesting approval to apply an alternative to any requirement of 310 CMR 7.70(8). That petition shall contain all of the relevant information specified in 40 CFR 75.66. Application of an alternative to any requirement of 310 CMR 7.70(8) is in accordance with 310 CMR 7.70(8) only to the extent that the petition is approved in writing by the Department.
3. The CO<sub>2</sub> authorized account representative of a CO<sub>2</sub> budget unit that is subject to an Acid Rain emissions limitation may submit a petition to the Administrator under 40 CFR 75.66 and to the Administrator-Department requesting approval to apply an alternative to a requirement concerning any additional CEMS required under the common stack provisions of 40 CFR 75.72 or a CO<sub>2</sub> concentration CEMS used under 40 CFR 75.71(a)(2). Application of an alternative to any such requirement of ~~310 CMR 7.70(8)~~ is in accordance with 310 CMR 7.70(8) only to the extent the petition is approved in writing by ~~both the Department and the Administrator, and subsequently approved in writing by the Department.~~

(g) CO<sub>2</sub> budget units that co-fire eligible biomass.

1. The CO<sub>2</sub> authorized account representative of a CO<sub>2</sub> budget unit that co-fires eligible biomass as a compliance mechanism under 310 CMR 7.70 shall report the following information to the Department or its agent for each calendar quarter:

- a. Chemical analysis of eligible biomass fired, including carbon content and heating value;
  - b. Moisture content of eligible biomass for each shipment received for firing at the CO<sub>2</sub> budget unit;
  - c. Total eligible biomass fuel input (in units of mass or volume, as appropriate) to the CO<sub>2</sub> budget unit;
  - d. Total eligible biomass heat input on an as-fired basis to the CO<sub>2</sub> budget unit (MMBtu);
  - e. Heat input rate of eligible biomass to the CO<sub>2</sub> budget unit (MMBtu/hr);
  - f. Fuel feed rate of eligible biomass to the CO<sub>2</sub> budget unit (in units of mass or volume per hour, as appropriate);
  - g. Total operating hours for which eligible biomass was fired;
  - h. CO<sub>2</sub> tons emitted from the CO<sub>2</sub> budget unit due to firing of eligible biomass;
  - i. Description and documentation of fuel sampling frequency and methodology; and,
  - j. Description and documentation of monitoring technology employed.
2. An owner or operator of a CO<sub>2</sub> budget unit shall calculate and submit to the Department or its agent on a quarterly basis the as-fired biomass CO<sub>2</sub> emissions factor (B<sub>EF</sub>) for the CO<sub>2</sub> budget unit for each distinct type of eligible biomass fired during the reporting quarter, represented as CO<sub>2</sub> lbs./MMBtu of biomass heat input. The as-fired CO<sub>2</sub> emissions factor shall be the lower of the following:

a. As measured and recorded by the continuous emissions monitor during all periods when firing eligible biomass alone; or

b. For solid fuel, as determined as follows:

$$B_{EF} \text{ (CO}_2 \text{ lbs./MMBtu)} = ((C \times F_{IN})/HI) (44 \text{ g/mol CO}_2/12 \text{ g/mol C})$$

where:

C = Carbon content of biomass (~~percent~~fraction by dry weight) for distinct fuel type;

F<sub>IN</sub> = Total biomass fuel input (lbs.) for distinct fuel type; and,

HI = Heat input, as-fired, (MMBtu) for distinct fuel type, as determined as follows:

$$HI = \sum_{i=1}^n (HHV_{\text{DRY}} (1 - MCW_{\text{AS-FIRED-}i})) \times F_{\text{IN-}i}$$

where:

HHV<sub>DRY</sub> = MMBtu/lb. (higher heating value) dry basis for distinct fuel type fired;

MCW<sub>AS-FIRED-*i*</sub> = Moisture content wet basis (~~percent~~fraction) for each shipment *i* fired; and,

F<sub>IN-*i*</sub> = Biomass fuel input (lbs.) for each shipment *i* fired.

c. For gaseous fuel, as determined as follows:

$$B_{EF} \text{ (CO}_2 \text{ lbs./MMBtu)} = ((C \times (F_{IN} \times D))/HHV) (44 \text{ g/mol CO}_2/12 \text{ g/mol})$$

where:

C = Carbon content of biogas (~~percent~~fraction by weight) for distinct fuel type;

F<sub>IN</sub> = ~~Total biogas fuel input (scf) for distinct fuel type;~~

D = Density of biogas (lbs./scf) for distinct fuel type; and,

~~HI = Total heat input (MMBtu) for distinct fuel type, as determined as follows:~~

$$HI = HHV \times F_{IN}$$

~~where:~~

HHV = MMBtu/scf (higher heating value) for distinct fuel type; ~~and,~~

~~F<sub>IN</sub> = Biogas fuel input (scf).~~

d. ~~Liquid fuels.~~ (Reserved.)

3. CO<sub>2</sub> emissions due to firing of eligible biomass shall be determined as follows:

$$\text{CO}_2 \text{ tons} = \sum_{i=1}^n (B_{\text{HI-}i} \times B_{\text{EF-}i} \times B_{\text{OF-}i}) / 2000 \text{ lbs. per short ton}$$

where:

CO<sub>2</sub> tons = CO<sub>2</sub> emissions due to firing of eligible biomass for the reporting quarter;  
B<sub>HI-*i*</sub> = Eligible biomass heat input on an as-fired basis (MMBtu) for the reporting quarter for each distinct type *i* of eligible biomass fired;

B<sub>EF-*i*</sub> = Eligible biomass emissions factor for the reporting quarter (lbs. CO<sub>2</sub>/MMBtu) for each distinct type *i* of eligible biomass fired; and,

B<sub>OF-*i*</sub> = Eligible biomass oxidation factor for each distinct type *i* of eligible biomass fired, derived for solid fuels based on the ash content of the eligible biomass fired and the carbon content of this ash, as determined pursuant to 310 CMR 7.70(8)(g)1.a.; for gaseous biomass fuels, a default oxidation factor of 0.995 may be used.

4. Fuel sampling methods and fuel sampling technology shall be consistent with the New York State Renewable Portfolio Standard Biomass Guidebook, May 2006.

(h) Additional requirements to provide output data.

1. CO<sub>2</sub> budget source shall submit to the Department or its agent net electrical output.

2. CO<sub>2</sub> budget sources selling steam should use billing meters to determine net steam output. A CO<sub>2</sub> budget source whose steam output is not measured by billing meters or whose steam output is combined with output from a non-CO<sub>2</sub> budget unit prior to measurement by the billing meter shall propose to the Department an alternative method for quantification of net steam output. If data for steam output is not available, the CO<sub>2</sub> budget source may report heat input providing useful steam output as a surrogate for steam output.

3. Monitoring. The owner or operator of each CO<sub>2</sub> budget unit required to submit an output monitoring plan pursuant to 310 CMR 7.70(3)(c) shall ~~submit an output monitoring plan that~~ proposes a method for quantification of net energy output in such output monitoring plan, including:

a. A diagram that includes the following features where applicable:

i. All CO<sub>2</sub> budget units and all generators served by each CO<sub>2</sub> budget unit and the relationship between CO<sub>2</sub> budget units and generators. If a generator served by a CO<sub>2</sub> budget unit is also served by a non-CO<sub>2</sub> budget unit, the non-CO<sub>2</sub> budget unit and its relationship to each generator should be indicated on the diagram as well. The diagram should indicate where the net electric output is measured and should include all electrical inputs and outputs to and from the CO<sub>2</sub> budget source. If net electric output is determined using a billing meter, the diagram should show each billing meter used to determine net sales of electricity and should show that all electricity measured at the point of sale is generated by the CO<sub>2</sub> budget units.

ii. If the CO<sub>2</sub> budget unit monitors net thermal output, the diagram should include all steam or hot water coming into the net steam system, including steam from CO<sub>2</sub> budget units and non-CO<sub>2</sub> budget units, and all exit points of steam or hot water from the net steam system. In addition, each input and output stream shall have an estimated temperature, pressure and phase

indicator, and an enthalpy in Btu/lb. The diagram of the net steam system should identify all useful loads, house loads, parasitic loads, any other steam loads and all boiler feedwater returns. The diagram shall represent all energy losses in the system as either usable or unusable losses. The diagram shall also indicate all flow meters, temperature or pressure sensors or other equipment used to calculate gross thermal output. If a sales agreement is used to determine net thermal output, the diagram should show the monitoring equipment used to determine the sales of steam.

b. A description of each output monitoring system. The description of the output monitoring system shall include a written description of the output system and the equations used to calculate output. For net thermal output systems, descriptions and justifications of each useful load shall be included.

c. A detailed description of all quality assurance/quality control activities that will be performed to maintain the output system in accordance with 310 CMR 7.70(8)(h)5.

d. Documentation supporting any output value(s) to be used as a missing data value should there be periods of invalid output data. The missing data output value shall be either zero or an output value that is likely to be lower than a measured value and that is approved as part of the monitoring plan required under 310 CMR 7.70(8)(h)3.

4. Initial certification. A certification statement shall be submitted by the CO<sub>2</sub> authorized account representative stating that either the output monitoring system consists entirely of billing meters or that the output monitoring system meets one of the accuracy requirements for non-billing meters at 310 CMR 7.70(8)(h)4.b. The certification shall be submitted in accordance with the compliance deadlines established in 310 CMR 7.70(3)(b).

a. Billing meters. The billing meter shall record the electric or thermal output. Any electric or thermal output values that the facility reports shall be the same as the values used in billing for the output. Any output measurement equipment used as a billing meter in commercial transactions requires no additional certification or testing.

b. Non-billing meters. For non-billing meters and systems that include a mixture of billing meters and non-billing meters, the output monitoring system shall meet either of the accuracy criteria in 310 CMR 7.70(8)(h)4i. and ii..

i. System approach to accuracy. The system approach to accuracy shall include a determination of how the system accuracy of within less than or equal to 10% of the reference value is achieved using the individual components in the system and should include data loggers and any wattmeters used to calculate the final net electric output data and/or any flowmeters for steam or condensate, temperature measurement devices, absolute pressure measurement devices, and differential pressure devices used for measuring thermal energy.

ii. Component approach to accuracy. If testing a piece of output measurement equipment shows that the output readings are not accurate to within less than or equal to 3.0% of the full scale value, then the equipment shall be repaired or replaced to meet that requirement. Data shall remain invalid until the output measurement equipment passes an accuracy test or is replaced with another piece of equipment that passes the accuracy test.



5. Ongoing QA/QC. The following ongoing quality assurance/quality control activities must be performed in order to maintain the output system:
- a. Billing meters. In the case where billing meters are used to determine output, no QA/QC activities beyond what are already performed are required.
  - b. Non-billing meters. Certain types of equipment such as potential transformers, current transformers, nozzle and venture type meters, and the primary element of an orifice plate only require an initial certification of calibration and do not require periodic recalibration unless the equipment is physically changed. However, the pressure and temperature transmitters accompanying an orifice plate shall require periodic retesting. For such pressure and temperature transmitters, and other types of equipment, either recalibrate or re-verify the meter accuracy at least once every two years (i.e., every eight calendar quarters), unless a consensus standard allows for less frequent calibrations or accuracy tests. The output monitoring system shall either meet an accuracy of within 10% of the reference value, or each component monitor for the output system shall meet an accuracy of within 3.0% of the full scale value, whichever is less stringent. If testing a piece of output measurement equipment shows that the output readings are not accurate to within 3.0% of the full scale value, then the equipment should be repaired or replaced to meet that requirement.
  - c. Out-of-control periods. If testing a piece of output measurement equipment shows that the output readings are not accurate to the certification value, data remain invalid until the output measurement equipment passes an accuracy test or is replaced with another piece of equipment that passes the accuracy test. All invalid data shall be replaced by either zero or an output value that is likely to be lower than a measured value and that is approved as part of the monitoring plan required under 310 CMR 7.70(8)(h)3.
6. Recordkeeping and reporting.
- a. General provisions. The CO<sub>2</sub> authorized account representative shall comply with all recordkeeping and reporting requirements in 310 CMR 7.70(8)(h) and with the requirements of 310 CMR 7.70(1)(e)5. and (2)(a)5.
  - b. Recordkeeping. Facilities shall retain data used to monitor, determine, or calculate net generation for ten years from the date reported.
  - c. Annual reports. The CO<sub>2</sub> authorized account representative shall submit annual output reports in a spreadsheet, as follows. The data shall be sent both electronically and in hardcopy by March 1 for the immediately preceding calendar year to the Department or its agent. The annual report shall include the annual total unit level MWh, ~~all the annual total~~ useful steam output and a certification statement from the CO<sub>2</sub> authorized account representative stating the following, “I am authorized to make this submission on behalf of the owners and operators of the CO<sub>2</sub> budget sources or CO<sub>2</sub> budget units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(9) RESERVED

(10) CO<sub>2</sub> Emissions Offset Projects.

(a) Purpose. The Department shall provide for the award of CO<sub>2</sub> offset allowances to project sponsors of CO<sub>2</sub> emissions offset projects or CO<sub>2</sub> emissions credit retirements that have reduced or avoided atmospheric loading of CO<sub>2</sub> or CO<sub>2</sub> equivalent, or sequestered carbon as demonstrated in accordance with the applicable provisions of 310 CMR 7.70(10). The requirements of 310 CMR 7.70(10) seek to ensure that CO<sub>2</sub> offset allowances awarded represent CO<sub>2</sub> equivalent emission reductions or carbon sequestration that are real, additional, verifiable, enforceable, and permanent within the framework of a standards-based approach. Subject to the relevant compliance deduction limitations of 310 CMR 7.70(6)(e)1.c., CO<sub>2</sub> offset allowances may be used by any CO<sub>2</sub> budget source for compliance purposes.

(b) Definitions.

Allocation period. The maximum number of years for which the Department may award CO<sub>2</sub> offset allowances to a project for a given consistency determination pursuant to 310 CMR 7.70(10).

Anaerobic digester. A device that promotes the decomposition of organic material to simple organics and gaseous biogas products, usually accomplished by means of controlling temperature and volume, and including a methane recovery system.

Anaerobic digestion. The degradation of organic material including manure brought about through the action of microorganisms in the absence of elemental oxygen.

Anaerobic storage. Storage of organic material in an oxygen-free environment, or under oxygen-free conditions, including but not limited to, holding tanks, ponds, and lagoons.

ANSI. American National Standards Institute.

ASHRAE. American Society of Heating, Refrigerating and Air-Conditioner Engineers.

Attribute. A characteristic associated with electricity generated using a particular renewable fuel, such as its generation date, facility geographic location, unit vintage, emissions output, fuel, state program eligibility, or other characteristic that can be identified, accounted for, and tracked.

Attribute credit. An attribute credit represents the attributes related to one megawatt-hour of electricity generation.

Biogas. Gas resulting from the decomposition of organic matter under anaerobic conditions. The principal constituents are methane and carbon dioxide.

Boiler (commercial). A self contained, low-pressure appliance for supplying steam or hot water to a commercial building.

Boiler (residential). A self contained, low-pressure appliance for supplying steam or hot water to a residential building.

Building envelope. The elements of a building that separate conditioned space from unconditioned space, or that enclose semi-heated space, through which thermal energy may be transferred to or from the exterior, unconditioned space, or conditioned space. Includes all elements that separate the interior of a building from the outdoor environment, including walls, windows, foundation, basement slab, ceiling, roof, and insulation.

CO<sub>2</sub>e. CO<sub>2</sub>e means carbon dioxide equivalent.

Commercial building. A building to which the provisions of ANSI/ASHRAE/IESNA Standard 90.1 apply, which includes buildings except low-rise residential buildings. Low-rise residential buildings include single family homes, multifamily structures of three stories or fewer above grade, and manufactured homes (modular and mobile).

Conflict of interest. A situation that may arise with respect to an individual in relation to any specific project sponsor, CO<sub>2</sub> emissions offset project or category of offset projects, such that the individual's other activities or relationships with other persons or organizations render or may render the individual incapable of providing an impartial certification opinion, or otherwise compromise the individual's objectivity in performing certification functions.

Condensing mode. The design and operation of furnaces or boilers in a mode that leads to the production of condensate in flue gases.

Cooperating regulatory agency. A regulatory agency in a state or United States jurisdiction that is not a participating state that has entered into a memorandum of understanding with the appropriate regulatory agencies of all participating states ~~Department~~ to carry out certain obligations relative to CO<sub>2</sub> emissions offset projects in that state or United States jurisdiction, including but not limited to the obligation to perform audits of offset project sites, and report violations of 310 CMR 7.70(10).

Energy conservation measure (ECM) or energy efficiency measure (EEM). A set of activities designed to increase the energy efficiency of a building or improve the management of energy demand.

Energy performance. A measure of the relative energy efficiency of a building, building equipment, or building components, as measured by the amount of energy required to provide building services. For building equipment and components, a relative measure of the impact of equipment or components on building energy usage.

Energy services. Provision of useful services to building occupants, such as heating and hot water, cooling, and lighting.

Forested condition. Land shall be deemed to be in a forested condition if it is:

1. At least 1.0 acre in size and 120.0 feet wide measured stem-to-stem from the outermost edge. Forested strips must be 120.0 feet wide for a continuous length of at least 363.0 feet in order to meet the acre threshold; and,
2. Meets at least one of the two following stocking criteria:

- a. The land is at least 10 percent stocked by trees of any size or has been at least 10 percent stocked in the past, and the land is not subject to non-forest use(s) that prevent normal tree regeneration and succession such as regular mowing, intensive grazing, or recreation activities; or,
- b. In several western woodland species where stocking cannot be determined, the land has at least 5 percent crown cover by trees of any size, or has had at least 5 percent cover in the past, and the land is not subject to non-forest use that prevents normal regeneration and succession such as regular mowing, chaining, or recreation activities.

Furnace (residential). A self-contained, indirect-fired appliance that supplies heated air to a residential building through ducts to conditioned spaces and that has a heat input rate of less than 225,000 Btu/hr. May apply to a furnace that meets the above heat input rate criteria and is installed in a commercial building.

HVAC system. The system or systems that provide, either collectively or individually, heating, ventilation, or air conditioning to a building, including the equipment, distribution network, and terminals.

IESNA. Illuminating Engineering Society of North America.

Independent verifier. An individual that has been approved by the Department or its agent to conduct verification activities.

Market penetration rate. A measure of the diffusion of a technology, product, or practice in a defined market, as represented by the percentage of annual sales for a product or practice, or as a percentage of the existing installed stock for a product or category of products, or as the percentage of existing installed stock that utilizes a practice. The Department may determine an appropriate market definition and market penetration metric for a category of technology, product or practice, and may issue guidance specifying the technologies, products or practices that meet a specified market penetration rate.

Non-census water. Streams, sloughs, estuaries, and canals more than 120 feet and less than 1/8 of a mile wide. Lakes, reservoirs, and ponds one (1) to 40 acres in size.

Non-forested condition. Land that does not meet the definition of "forested condition." Non-forested land includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining rights-of-way, power line clearings of any width, and non-census water. If intermingled in forest areas, unimproved roads and non-forest strips must be more than 120.0 feet wide, and clearings more than one acre in size, to qualify as non-forest land.

Offset project. An offset project includes all equipment, materials, items, or actions directly related to the reduction of CO<sub>2</sub> equivalent emissions or the sequestration of carbon specified in a consistency application submitted pursuant to 310 CMR 7.70(10)(d). Equipment, materials, items, or actions unrelated to an offset project reduction of CO<sub>2</sub> equivalent emissions or the sequestration of carbon, but occurring at a

location where an offset project occurs, shall not be considered part of an offset project, unless specified at 310 CMR 7.70(10)(e).

Onsite combustion. The combustion of fossil fuel at a building to provide building services, such as heating, hot water, or electricity.

Passive solar. A combination of building design features and building components that utilize solar energy to reduce or eliminate the need for mechanical heating and cooling and daytime artificial lighting.

Permanently retired. A greenhouse gas allowance or credit has been “permanently retired” if it has been placed in a retirement account controlled by the jurisdiction that generated the allowance or credit, or has been placed in an allowance retirement account controlled by the Department, or is otherwise determined by the Department to have been rendered unusable.

Project commencement. For an offset project involving physical construction, other work at an offset project site, or installation of equipment or materials, the date of the beginning of such activity. For an offset project that involves the implementation of a management activity or protocol, the date on which such activity is first implemented or such protocol first utilized.

Project sponsor. ~~A person who submits a consistency application or a monitoring and verification report. Any person may act as the sponsor of an eligible CO<sub>2</sub> emissions offset project or CO<sub>2</sub> emissions credit retirement, provided that person meets the requirements at 310 CMR 7.70(10)(d).~~ The CO<sub>2</sub> authorized account representative for the general account of an eligible CO<sub>2</sub> emissions offset project or CO<sub>2</sub> emissions credit retirement.

Regional-type anaerobic digester. An anaerobic digester using feedstock from more than one agricultural operation, or importing feedstock from more than one agricultural operation. Also commonly referred to as a “community digester” or “centralized digester.”

Renewable portfolio standard. A statutory or regulatory requirement that a load-serving entity provide a certain portion of the electricity it supplies to its customers from renewable energy sources, or any other statutory or regulatory requirement that a certain portion of electricity supplied to the electricity grid be generated from renewable energy sources.

Residential building. A low-rise residential building to which the provisions of ANSI/ASHRAE/IESNA Standard 90.1 do not apply. Includes single family homes, multifamily structures of three stories or fewer above grade, and manufactured homes (modular and mobile).

RESNET. Residential Energy Services Network.

SF<sub>6</sub>-containing operating equipment. Any equipment used for the transmission and distribution of electricity that contains SF<sub>6</sub>.

System benefit fund. Any fund collected directly from retail electricity or natural gas ratepayers.

Total solids. Total solids are the total of all solids in a sample. They include the total suspended solids, total dissolved solids, and volatile suspended solids.

Transmission and/or distribution entity. The assets and equipment used to transmit and distribute electricity from an electric generator to the electrical load of a customer. Includes all related assets and equipment located within the service territory of the entity, defined as the service territory of a load-serving entity specified by the applicable state regulatory agency.

Verification. The ~~determination~~ verification by an independent verifier that certain parts of a CO<sub>2</sub> emissions offset project consistency application and/or measurement, monitoring or verification report conforms to the requirements of 310 CMR 7.70(10).

Volatile solids. The fraction of total solids that is comprised primarily of organic matter.

Whole-building energy performance. The overall energy performance of a building, taking into account the integrated impact on energy usage of all building components and systems.

Whole-building retrofit. Any building project that involves the replacement of more than one building system, or set of building components, and also requires a building permit.

Zero net energy building. A building designed to produce as much energy, using renewable energy sources, as the building is projected to use, as measured on an annual basis.

(c) General requirements.

1. Eligible CO<sub>2</sub> emissions offset projects. ~~The Department may~~ To qualify for the award of CO<sub>2</sub> offset allowances, to the sponsor of any of the following an offset projects that have shall ~~satisfy~~ all the applicable requirements of 310 CMR 7.70(10).

- a. Offset project types. The following types of offset projects are eligible for the award of CO<sub>2</sub> offset allowances:
- i. landfill methane capture and destruction;
  - ii. reduction in emissions of sulfur hexafluoride (SF<sub>6</sub>);
  - iii. sequestration of carbon due to afforestation;
  - iv. reduction or avoidance of CO<sub>2</sub> emissions from natural gas, oil, or propane end-use combustion due to end-use energy efficiency; and,
  - v. avoided methane emissions from agricultural manure management operations.

b. Offset project locations.

i. To qualify for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10), Eligible offset projects may be located in any of the following locations:

- (i) ~~In any participating state~~ Massachusetts; and,

- (ii) In any state or other United States jurisdiction in which a cooperating regulatory agency has entered into a memorandum of understanding with the appropriate regulatory agencies of all participating states to carry out certain obligations relative to CO<sub>2</sub> emissions offset projects in that state or U.S. jurisdiction, including but not limited to the obligation to perform audits of offset project sites, and report violations of 310 CMR 7.70(10).
  - ii. Projects located (in whole or in part) in one or more participating states are not eligible for CO<sub>2</sub> offset allowances under 310 CMR 7.70(10) unless more of the CO<sub>2</sub> equivalent emissions reduction or carbon sequestration due to the offset project is projected to occur in Massachusetts than in any other participating state.
- 2. Eligible CO<sub>2</sub> emissions credit retirements. ~~The Department shall~~ To qualify for the award of CO<sub>2</sub> offset allowances, to the sponsor of a CO<sub>2</sub> emissions credit retirement that has ~~shall~~ satisfy ~~ied~~ all the applicable requirements of 310 CMR 7.70(10).
  - a. CO<sub>2</sub> emissions credit retirements include the permanent retirement of greenhouse gas allowances or credits issued pursuant to any governmental mandatory carbon constraining program outside the United States that places a specific tonnage limit on greenhouse gas emissions, provided the allowances or credits are acceptable and valid for use in that program at the time of the filing of the consistency application under 310 CMR 7.70(10)(d), or certified greenhouse gas emissions reduction credits issued pursuant to the United Nations Framework Convention on Climate Change (UNFCCC) or protocols adopted through the UNFCCC process.
  - b. The Department may award CO<sub>2</sub> offset allowances for CO<sub>2</sub> emissions credit retirements only after the occurrence of a stage two trigger event.
- 3. Project sponsor. Any person may act as the sponsor of an eligible CO<sub>2</sub> emissions offset project or CO<sub>2</sub> emissions credit retirement, provided that person meets the requirements at 310 CMR 7.70(10)(d).
- 4. General additionality requirements. Except as provided with respect to specific offset project standards in 310 CMR 7.70(10)(e), the following general requirements shall apply:
  - a. CO<sub>2</sub> offset allowances shall not be awarded to an offset project or CO<sub>2</sub> emissions credit retirement that is required pursuant to any local, state or federal law, regulation, ordinance, by-law, or administrative or judicial order. If an offset project receives a consistency determination under 310 CMR 7.70(10)(d) and is later required by local, state or federal law, regulation, or administrative or judicial order, then the offset project shall remain eligible for the award of CO<sub>2</sub> offset allowances until the end of its current allocation period but its eligibility shall not be extended for an additional allocation period;
  - b. CO<sub>2</sub> offset allowances shall not be awarded to an offset project that includes an electric generation component, unless the project sponsor transfers to the Department or its agent legal rights to any and all attribute credits (other than the CO<sub>2</sub> offset allowances that would be awarded under 310 CMR 7.70(10)(g)) generated from the operation of the offset project that may be used for compliance with a renewable portfolio standard or other regulatory requirement;
  - c. CO<sub>2</sub> offset allowances shall not be awarded to an offset project that receives funding or other incentives from any system benefit fund, or funds or other

- incentives provided through the auction of CO<sub>2</sub> allowances from the Massachusetts Auction Account pursuant to 310 CMR 7.70 (5)(c)1.;
- d. CO<sub>2</sub> offset allowances shall not be awarded to an offset project or CO<sub>2</sub> emissions credit retirement that is awarded credits or allowances under any other mandatory or voluntary greenhouse gas program except as provided in 310 CMR 7.70(10)(c)4.e.; and,
- e. CO<sub>2</sub> offset allowances may be awarded to an offset project for which GHG Credits were created pursuant to 310 CMR 7.00: Appendix B(7) provided the offset project meets all of the requirements of 310 CMR 7.70(10). However, CO<sub>2</sub> offset allowances shall not be awarded to an offset project for greenhouse gas emissions reduced, avoided, or sequestered for which GHG Credits were created pursuant to 310 CMR 7.00: Appendix B(7) unless:
- i. The GHG Credits have not been used to demonstrate compliance with 310 CMR 7.29; and,
  - ii. The applicant has requested that the Department retire or invalidate the GHG Credits contingent upon the Department's awarding of CO<sub>2</sub> offset allowances for those reduced, avoided, or sequestered greenhouse gas emissions.
5. Maximum allocation periods for CO<sub>2</sub> emissions offset projects.
- a. Maximum allocation periods. Except as provided in 310 CMR 7.70(10)(c)5.b., the Department may award CO<sub>2</sub> offset allowances under 310 CMR 7.70(10)(g) for an initial 10-year allocation period. At the end of the initial 10-year allocation period, the Department may award CO<sub>2</sub> offset allowances for a second 10-year allocation period, provided the offset sponsor has submitted a consistency application pursuant to 310 CMR 7.70(10)(d) prior to the expiration of the initial allocation period, and the Department has issued a consistency determination pursuant to 310 CMR 7.70(10)(d)5.b.
  - b. Maximum afforestation allocation period. The Department may award CO<sub>2</sub> offset allowances under 310 CMR 7.70(10)(g) for any afforestation offset project for an initial 20-year allocation period. At the end of the initial 20-year allocation period, the Department may award CO<sub>2</sub> offset allowances for a second 20-year allocation period, provided the offset sponsor has submitted a consistency application for the afforestation offset project pursuant to 310 CMR 7.70(10)(d) prior to the expiration of the initial allocation period, and the Department has issued a consistency determination pursuant to 310 CMR 7.70(10)(d)5.b. At the end of the second 20-year allocation period, the Department may award CO<sub>2</sub> offset allowances for a third 20-year allocation period, provided the offset sponsor has submitted a consistency application for the afforestation offset project pursuant to 310 CMR 7.70(10)(d) prior to the expiration of the second allocation period, and the Department has issued a consistency determination pursuant to 310 CMR 7.70(10)(d)5.b. In no event may an afforestation offset project be awarded CO<sub>2</sub> offset allowances for more than a total of 60 allocation years.
6. Timing of offset projects. The Department may award CO<sub>2</sub> offset allowances under 310 CMR 7.70(10)(g) only for offset projects that are initially commenced on or after December 20, 2005.
7. Offset project audit. Project sponsors shall provide the Department or its agent access to the physical location of the offset project to inspect for compliance with 310 CMR 7.70(10). For offset projects located in any state or other U.S. jurisdiction that is not a participating state, project sponsors shall also provide the cooperating



regulatory agency with access to the physical location of the offset project to inspect for compliance with 310 CMR 7.70(10).

8. Ineligibility due to noncompliance. If at any time the Department determines that a project sponsor has not complied with the requirements of 310 CMR 7.70(10), then the Department may revoke and retire any and all CO<sub>2</sub> offset allowances in the project sponsor's account. If at any time the Department determines that an offset project does not comply with the requirements of 310 CMR 7.70(10), then the Department may revoke any approvals it has issued relative to an offset project.

(d) Application process.

1. Establishment of general account. The sponsor of an offset project or CO<sub>2</sub> emissions credit retirement must establish a general account under 310 CMR 7.70(6)(b)2. All submissions to the Department required for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10) must be from the CO<sub>2</sub> authorized account representative for the general account of the sponsor of the relevant offset project or CO<sub>2</sub> emissions credit retirement, herein referred to as "project sponsor."

2. Consistency application deadlines.

- a. For offset projects commenced prior to January 1, 2009, the project sponsor must submit the consistency application on or before June 30, 2009.
- b. For offset projects commenced on or after January 1, 2009, the consistency application must be submitted by the date that is 6 months after the offset project is commenced.
- c. Any consistency application that fails to meet the deadlines of 310 CMR 7.70(10)(d)2. shall result in the denial of the consistency application and the continued ineligibility of the subject offset project.

3. Consistency application contents.

- a. For an offset project, the consistency application must include the following information.
  - i. The project's sponsor's name, address, email address, telephone number, facsimile transmission number, and account number.
  - ii. The offset project description as required by the relevant provisions of 310 CMR 7.70(10)(e).
  - iii. A demonstration that the offset project meets all applicable requirements set forth in 310 CMR 7.70(10).
  - iv. The emissions baseline determination as required by the relevant provisions of 310 CMR 7.70(10)(e).
  - v. An explanation of how the projected reduction or avoidance of atmospheric loading of CO<sub>2</sub> or CO<sub>2</sub> equivalent or the sequestration of carbon is to be quantified, monitored, and verified as required by the relevant provisions of 310 CMR 7.70(10)(e).
  - vi. A completed consistency application agreement that reads as follows:  
"The undersigned project sponsor recognizes and accepts that the application for, and the receipt of, CO<sub>2</sub> offset allowances under the CO<sub>2</sub> Budget Trading Program is predicated on the project sponsor following all the requirements of 310 CMR 7.70(10). The undersigned project sponsor holds the legal rights to the offset project, or has been granted the right to act on behalf of a party that holds the legal rights to the offset project. I understand that eligibility for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10) is contingent on meeting the requirements of 310 CMR 7.70(10). I authorize the Department or its agent to audit this offset project for purposes of verifying that the offset

project, including the monitoring and verification plan, has been implemented as described in this application. I understand that this right to audit shall include the right to enter the physical location of the offset project. I submit to the legal jurisdiction of Massachusetts.”

vii. ~~A list of all offset projects under the sponsor’s ownership or control (or under the ownership or control of any entity which controls, is controlled by, or has common control with the sponsor) for which a consistency application or a monitoring and verification application has been submitted under 310 CMR 7.70(10) (or similar provisions in the rules of other participating states). If any consistency application or monitoring and verification application has been denied, revoked, voided, or terminated by the Department or any participating state, then such status shall be stated and explained. The Department reserves the right to reject a consistency application or a monitoring and verification application in the event that a project applicant has a history of fraud, deceit, deception, misrepresentation, or the providing of false or misleading information to the Department or other participating states regarding CO<sub>2</sub> emissions offset projects.~~ A list of all offset projects under the sponsor’s ownership or control (or under the ownership or control of any entity which controls, is controlled by, or has common control with the sponsor) for which a consistency application or a monitoring and verification application has been submitted under 310 CMR 7.70(10), or similar provisions in the rules of other participating states. If any consistency application or monitoring and verification application has been denied or revoked by the Department or any participating state, then such status shall be documented and explained. If any CO<sub>2</sub> offset allowance has been revoked or retired by the Department or any participating state as a result of a determination that a project sponsor has not complied with the requirements of 310 CMR 7.70(10), or similar provisions in the rules of other participating states, then such action shall be documented and explained. The Department reserves the right to reject a consistency application or a monitoring and verification application on the basis of previous fraud, deceit, deception, misrepresentation, submittal of false or misleading information to the Department or other participating states regarding CO<sub>2</sub> emissions offset projects, or a finding under 310 CMR 7.70(10)(c)8. of failure to comply with the requirements of 310 CMR 7.70(10), or similar provisions in the rules of other participating states.

viii. A verification report and certification statement signed by an independent verifier accredited pursuant to 310 CMR 7.70(10)(f) that expresses that the independent verifier has reviewed the entire application and evaluated the following in relation to the applicable requirements at 310 CMR 7.70(10)(c) and (e), and any applicable guidance issued by the Department.

- (i) The adequacy and validity of information supplied by the project sponsor to demonstrate that the offset project meets the applicable eligibility requirements of 310 CMR 7.70(10)(c) and (e).
- (ii) The adequacy and validity of information supplied by the project sponsor to demonstrate baseline emissions pursuant to the applicable requirements at 310 CMR 7.70(10)(e).
- (iii) The adequacy of the monitoring and verification plan submitted pursuant to the applicable requirements at 310 CMR 7.70(10)(e).

- (iv) Such other evaluations and statements as may be required by the Department.
- ix. Disclosure of any voluntary or mandatory programs, other than the CO<sub>2</sub> Budget Trading Program, to which greenhouse gas emissions data related to the offset project has been, or will be reported.
- x. For offset projects located in a state or United States jurisdiction that is not a participating state, a demonstration that the project sponsor has complied with all requirements of the cooperating regulatory agency in the state or United States jurisdiction where the offset project is located.
- xi. The offset project sponsor shall make the following certification: "I certify that I have personally examined the foregoing information, and am familiar with the information contained in this application and any attachments thereto and that, based on my inquiry of those persons immediately responsible for obtaining the information, I believe that the information contained in this application, is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment."
- b. For a CO<sub>2</sub> emissions credit retirement, the consistency application must include sufficient information to demonstrate that the CO<sub>2</sub> emissions credit is eligible pursuant to 310 CMR 7.70(10)(c)2., was lawfully held by the project sponsor, and has been permanently and irrevocably retired.
- c. Consistency applications shall be submitted in a format approved by the Department.
- 4. Place for filing consistency application~~Prohibition against filing consistency applications in more than one participating state.~~
  - a. ~~For an offset project located in one participating state (in whole or in part), the consistency application must be filed with the appropriate regulatory agency in that State.~~
  - b. ~~For an offset project located wholly outside all participating states, the consistency application may be filed with the appropriate regulatory agency in any one participating state, provided a copy of the consistency application shall be filed with the cooperating regulatory agency in the state or United States jurisdiction where the offset project is located.~~
  - c. ~~For an offset project located in more than one participating state, the consistency application must be filed in the participating state where the larger part of the CO<sub>2</sub>-equivalent emissions reduction or carbon sequestration due to the offset project is projected to occur.~~
  - d. ~~For CO<sub>2</sub> emissions credit retirements, the consistency application may be filed with the appropriate regulatory agency in any one participating state.~~
  - a. Consistency applications may not be submitted to the Department if a consistency application has already been submitted for the same project, or any portion of the same project, in another participating state, unless the consistency application was rejected by another participating state solely because more of the CO<sub>2</sub> equivalent emissions reduction or carbon sequestration due to the offset project is projected to occur in Massachusetts than in any other participating state
  - b. Consistency applications may not be submitted to the Department if a consistency application has already been submitted for the same CO<sub>2</sub> emissions credit retirement in another participating state.
- 5. Department action on consistency applications.

- a. Completeness determination. Within 30 days following receipt of the consistency application filed pursuant to 310 CMR 7.70(10)(d)2., the Department shall notify the project sponsor whether the consistency application is complete. A complete consistency application is one that is in an approved form and is determined by the Department to be complete for the purpose of commencing review of the consistency application. In no event shall a completeness determination prevent the Department from requesting additional information in order to enable the Department to make a consistency determination under 310 CMR 7.70(10)(d)5.b.
- b. Consistency determination. Within 150 days of making the completeness determination under 310 CMR 7.70(10)(d)5.a., the Department shall issue a determination as to whether the offset project is consistent with the requirements of 310 CMR 7.70(10)(c) and (d) and the requirements of the applicable offset project standard of 310 CMR 7.70(10)(e). For any offset project found to lack consistency with these requirements, the Department shall inform the project sponsor of the offset project's deficiencies.

(e) CO<sub>2</sub> emissions offset project standards.

1. Landfill methane capture and destruction. ~~To qualify for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10),~~ Offset projects that capture and destroy methane from landfills shall ~~qualify for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10),~~ provided they meet the requirements of 310 CMR 7.70(10)(e)1., and all other applicable requirements of 310 CMR 7.70(10).

a. Eligibility. Eligible offset projects shall occur at landfills that are not subject to the New Source Performance Standards (NSPS) for municipal solid waste landfills, 40 CFR Part 60, Subpart Cc and Subpart WWW.

b. Offset project description. The offset project sponsor shall provide a detailed narrative of the offset project actions to be taken, including documentation that the offset project meets the eligibility requirements of ~~under 310 CMR~~

7.70(10)(e)1.a. The project narrative shall include the following information.

- i. Owner and operator of the offset project;
- ii. Location and specifications of the landfill where the offset project will occur, including waste in place;
- iii. Owner and operator of the landfill where the offset project will occur; and,
- iv. Specifications of the equipment to be installed and a technical schematic of the offset project.

c. Emissions baseline determination. The emissions baseline shall represent the potential fugitive landfill emissions of CH<sub>4</sub> (in tons of CO<sub>2</sub>e), as represented by the CH<sub>4</sub> collected and metered for thermal destruction as part of the offset project, and calculated in accordance with 310 CMR 7.70(10)(e)1.c.

$$\text{Emissions (tons CO}_2\text{e)} = (\text{V} \times \text{M} \times (1 - \text{OX}) \times \text{GWP}) / 2000$$

where:

V = Volume of CH<sub>4</sub> collected (ft<sup>3</sup>);

M = Mass of CH<sub>4</sub> per cubic foot (0.04246 lbs/ft<sup>3</sup> default value at 1 atmosphere and 20 ° C);

OX = Oxidation factor (0.10), representing estimated portion of collected CH<sub>4</sub> that would have eventually oxidized to CO<sub>2</sub> if not collected; and,

GWP = CO<sub>2</sub>e global warming potential of CH<sub>4</sub> (23).

d. Calculating emissions reductions. Emissions reductions shall be determined based on potential fugitive CH<sub>4</sub> emissions that would have occurred at the landfill if metered CH<sub>4</sub> collected from the landfill for thermal destruction as part of the offset project was not collected and destroyed. CO<sub>2</sub>e emissions reductions shall be calculated as follows:

$$\text{Emissions Reductions (tons CO}_2\text{e)} = (V \times M \times (1 - \text{OX}) \times C_{\text{ef}} \times \text{GWP}) / 2000$$

where:

V = Volume of CH<sub>4</sub> collected (ft<sup>3</sup>);

M = Mass of CH<sub>4</sub> per cubic foot (0.04246 lbs/ft<sup>3</sup> default value at 1 atmosphere and 20 ° C);

OX = Oxidation factor (0.10), representing estimated portion of collected CH<sub>4</sub> that would have eventually oxidized to CO<sub>2</sub> if not collected;

C<sub>ef</sub> = Combustion efficiency of methane control technology (0.98); and,

GWP = CO<sub>2</sub>e global warming potential of CH<sub>4</sub> (23).

e. Monitoring and verification requirements. Offset projects shall employ a landfill gas collection system that provides continuous metering and data computation of landfill gas volumetric flow rate and CH<sub>4</sub> concentration. Annual monitoring and verification reports shall include monthly volumetric flow rate and CH<sub>4</sub> concentration data, including documentation that the CH<sub>4</sub> was actually supplied to the combustion source. Monitoring and verification is also subject to the following requirements.

i. The project sponsor shall submit a monitoring and verification plan as part of the consistency application that includes a quality assurance and quality control program associated with equipment used to determine landfill gas volumetric flow rate and CH<sub>4</sub> composition. The monitoring and verification plan shall also include provisions for ensuring that measuring and monitoring equipment is maintained, operated, and calibrated based on manufacturer recommendations, as well as provisions for the retention of maintenance records for audit purposes. The monitoring and verification plan shall be certified by an independent verifier accredited pursuant to 310 CMR 7.70(10)(f).

ii. The project sponsor shall annually verify landfill gas CH<sub>4</sub> composition through landfill gas sampling and independent laboratory analysis using applicable U.S. Environmental Protection Agency laboratory test methods.

2. Reduction in emissions of sulfur hexafluoride (SF<sub>6</sub>). To qualify for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10), ~~Offset projects that prevent emissions of sulfur hexafluoride to the atmosphere from equipment in the electricity transmission and distribution sector, through capture and storage, recycling, or destruction, shall qualify for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10), provided they meet the requirements of 310 CMR 7.70(10)(e)2. and all other applicable requirements of 310 CMR 7.70(10).~~

a. Eligibility.

i. Eligible offset projects shall consist of incremental actions beyond those taken during the baseline year to achieve a reduction in SF<sub>6</sub> emissions relative to the baseline year. Eligible actions may include an expansion of existing actions. The identified actions to be taken shall be consistent with the guidance provided in International Electrotechnical Commission (IEC) 1634, “High-voltage switchgear and control gear—Use and handling of sulfur hexafluoride (SF<sub>6</sub>) in high-voltage switchgear and control gear,” (CEI/IEC

1634, 1995-04), and Electric Power Research Institute (EPRI), “Practical Guide to SF<sub>6</sub> Handling Practices,” (TR-113933, 2002).

ii. Except as provided in 310 CMR 7.70(10)(e)2.a.iii., eligible offset projects shall have an SF<sub>6</sub> entity-wide emissions rate for the baseline year that is less than the applicable emissions rate in Table 1. The entity-wide SF<sub>6</sub> emissions rate shall be calculated as follows:

$$\text{SF}_6 \text{ Emissions Rate (\%)} = (\text{Total SF}_6 \text{ Emissions for Reporting Year}) / (\text{Total SF}_6 \text{ Nameplate Capacity at End of Reporting Year})$$

where:

SF<sub>6</sub> Nameplate Capacity refers to all SF<sub>6</sub> containing equipment owned and/or operated by the entity, at full and proper SF<sub>6</sub> charge of the equipment rather than the actual charge of the equipment (which may reflect leakage).

**310 CMR 7.70(10)(e)2.a.ii. Table 1**  
SF<sub>6</sub> Emissions Rate Performance Standards

A. Emission Regions

<u>Region A</u>	<u>Region B</u>	<u>Region C</u>	<u>Region D</u>	<u>Region E</u>
Connecticut	Alabama	Colorado	Arkansas	Alaska
Delaware	District of Columbia	Illinois	Iowa	Arizona
Maine	Florida	Indiana	Kansas	California
Massachusetts	Georgia	Michigan	Louisiana	Hawaii
New Jersey	Kentucky	Minnesota	Missouri	Idaho
New York	Maryland	Montana	Nebraska	Nevada
New Hampshire	Mississippi	North Dakota	New Mexico	Oregon
Pennsylvania	North Carolina	Ohio	Oklahoma	Washington
Rhode Island	South Carolina	South Dakota	Texas	
Vermont	Tennessee	Utah		
	Virginia	Wisconsin		
	West Virginia	Wyoming		

B. Emissions Rate Performance Standards

<u>Region</u>	<u>Emission Rate<sup>a</sup></u>
Region A	9.68%
Region B	5.22%
Region C	9.68%
Region D	5.77%
Region E	3.65%
U.S. (National)	9.68%

<sup>a</sup> Based on weighted average 2004 emissions rates for U.S. EPA SF<sub>6</sub> Partnership utilities in each region. If the weighted average emissions rate in a region is higher than the national weighted average, the default performance standard is the national weighted average emissions rate.

iii. An SF<sub>6</sub> offset project shall be eligible even if the SF<sub>6</sub> entity-wide emissions rate in the baseline year exceeds the applicable rate in 310 CMR 7.70(10)(e)2.a.ii., provided that the project sponsor demonstrates and the Department determines that the project is being implemented at a transmission and/or distribution entity serving a predominantly urban service territory and that at least two of the following factors prevent optimal management of SF<sub>6</sub>.

(i) The entity is comprised of older than average installed transmission and distribution equipment in relation to the national average age of equipment.

(ii) A majority of the entity's electricity load is served by equipment that is located underground, and poor accessibility of such underground equipment precludes management of SF<sub>6</sub> emissions through regular ongoing maintenance.

(iii) The inability to take a substantial portion of equipment out of service, as such activity would impair system reliability.

(iv) Required equipment purpose or design for a substantial portion of entity transmission and distribution equipment results in inherently leak-prone equipment.

b. Offset project description. The offset project sponsor shall provide a detailed narrative of the offset project actions to be taken, including documentation that the offset project meets the eligibility requirements of 310 CMR 7.70(10)(e)2.a. The offset project narrative shall include the following information.

i. Description of the transmission and/or distribution entity suitable in detail to specify the service territory served by the entity.

ii. Owner and operator of the transmission and/or distribution entity.

c. Emissions baseline determination. If the consistency application is filed on or after January 1, 2009, baseline SF<sub>6</sub> emissions shall be determined based on annual entity-wide reporting of SF<sub>6</sub> emissions for the calendar year immediately preceding the calendar year in which the consistency application is filed (designated the baseline year). If the consistency application is filed prior to 2009, the baseline year may be 2005, but no earlier. The reporting entity shall systematically track and account for all entity-wide uses of SF<sub>6</sub> in order to determine entity-wide emissions of SF<sub>6</sub>. The scope of such tracking and accounting shall include all electric transmission and distribution assets and all SF<sub>6</sub>-containing and SF<sub>6</sub>-handling equipment owned and/or operated by the reporting entity.

i. Emissions shall be determined based on the following mass balance method: SF<sub>6</sub> Emissions (lbs.) = (SF<sub>6</sub> Change in Inventory) + (SF<sub>6</sub> Purchases and Acquisitions) – (SF<sub>6</sub> Sales and Disbursements) – (Change in Total SF<sub>6</sub> Nameplate Capacity of Equipment)

where:

Change in Inventory is the difference between the quantity of SF<sub>6</sub> gas in storage at the beginning of the reporting year and the quantity in storage at the end of the reporting year. The term "quantity in storage" includes all SF<sub>6</sub> gas contained in cylinders (such as 115-pound storage cylinders), gas carts, and other storage containers. It does not refer to SF<sub>6</sub> gas held in SF<sub>6</sub>-using operating equipment. The change in inventory will be negative if the quantity of SF<sub>6</sub> gas in storage increases over the course of the year. Purchases and Acquisitions of SF<sub>6</sub> is the sum of all the SF<sub>6</sub> gas acquired from other parties

during the reporting year, as contained in storage containers or SF<sub>6</sub>-using operating equipment. Sales and disbursements of SF<sub>6</sub> is the sum of all the SF<sub>6</sub> gas sold or otherwise disbursed to other parties during the reporting year, as contained in storage containers and SF<sub>6</sub>-using operating equipment. Change in Total SF<sub>6</sub> Nameplate Capacity of Equipment is the net change in the total volume of SF<sub>6</sub>-containing operating equipment during the reporting year. The net change in nameplate capacity is equal to new equipment nameplate capacity, minus retired equipment nameplate capacity. This quantity shall be negative if the retired equipment has a total nameplate capacity larger than the total nameplate capacity of the new equipment. “Total nameplate capacity” refers to the full and proper SF<sub>6</sub> charge of the equipment rather than to the actual charge, which may reflect leakage.

ii. Emissions shall be calculated as follows:

$$\text{Emissions (tons CO}_2\text{e)} = [(V_{\text{iby}} - V_{\text{iey}}) + (PA_{\text{psd}} + PA_{\text{e}} + PA_{\text{rre}}) - (SD_{\text{op}} + SD_{\text{rs}} + SD_{\text{df}} + SD_{\text{sor}}) - (CNP_{\text{ne}} - CNP_{\text{rse}})] \times \text{GWP}/2000$$

where (all SF<sub>6</sub> values in lbs.):

V<sub>iby</sub> = SF<sub>6</sub> inventory in cylinders, gas carts, and other storage containers (not SF<sub>6</sub>-containing operating equipment) at the beginning of the reporting year;

V<sub>iey</sub> = SF<sub>6</sub> inventory in cylinders, gas carts, and other storage containers (not SF<sub>6</sub>-containing operating equipment) at the end of the reporting year;

PA<sub>psd</sub> = SF<sub>6</sub> purchased from suppliers or distributors in cylinders;

PA<sub>e</sub> = SF<sub>6</sub> provided by equipment manufacturers with or inside SF<sub>6</sub>-containing operating equipment;

PA<sub>rre</sub> = SF<sub>6</sub> returned to the reporting entity after offsite recycling;

SD<sub>op</sub> = Sales of SF<sub>6</sub> to other parties, including gas left in SF<sub>6</sub>-containing operating equipment that is sold;

SD<sub>rs</sub> = Returns of SF<sub>6</sub> to supplier (producer or distributor);

SD<sub>df</sub> = SF<sub>6</sub> sent to destruction facilities;

SD<sub>sor</sub> = SF<sub>6</sub> sent offsite for recycling;

CNP<sub>ne</sub> = Total SF<sub>6</sub> nameplate capacity of new SF<sub>6</sub>-containing operating equipment at proper full charge;

CNP<sub>rse</sub> = Total SF<sub>6</sub> nameplate capacity of retired or sold SF<sub>6</sub>-containing operating equipment at proper full charge; and

GWP = CO<sub>2</sub>e global warming potential of SF<sub>6</sub> (22,200).

iii. As part of the consistency application required pursuant to 310 CMR 7.70(10)(d)2. and 3. and in annual monitoring and verification reports required pursuant to 310 CMR 7.70(10)(g)2. and 3., the project sponsor shall provide the documentation required at 310 CMR 7.70(10)(e)2.e.i. through iii. to support emissions calculations.

d. Calculating emissions reductions. Emissions reductions shall represent the annual entity-wide emissions reductions of SF<sub>6</sub> for the reporting entity, relative to emissions in the baseline year. Emissions reductions shall be determined as follows, using the quantification method outlined in 310 CMR 7.70(10)(e)2.c.ii. to determine emissions in both the baseline year and reporting year(s):

$$\text{Emissions Reduction (tons CO}_2\text{e)} = (\text{Total Pounds of SF}_6\text{ Emissions in Baseline Reporting Year}) - (\text{Total Pounds of SF}_6\text{ Emissions in Reporting Year}) \times \text{GWP}/2000$$

where:

GWP = CO<sub>2</sub>e global warming potential of SF<sub>6</sub> (22,200).



e. Monitoring and verification requirements. The annual monitoring and verification report shall include supporting material detailing the calculations and data used to determine SF<sub>6</sub> emissions reductions, and shall also provide the following documentation.

- i. The project sponsor shall identify a facility(ies) managed by the entity from which all SF<sub>6</sub> gas is procured and disbursed and maintain an entity-wide log of all SF<sub>6</sub> gas procurements and disbursals. The entity-wide log shall include the weight of each cylinder transported before shipment from the facility(ies) and the weight of each cylinder after return to the facility(ies). A specific cylinder log shall also be maintained for each cylinder that is used to fill equipment with SF<sub>6</sub> or reclaim SF<sub>6</sub> from equipment. The cylinder log shall be retained with the cylinder and indicate the location and specific identifying information of the equipment being filled, or from which SF<sub>6</sub> is reclaimed, and the weight of the cylinder before and after this activity. The cylinder log shall be returned with the cylinder to the facility when the activity is complete or the cylinder is empty.
- ii. A current entity-wide inventory of all SF<sub>6</sub>-containing operating equipment and all other SF<sub>6</sub>-related items, including cylinders, gas carts, and other storage containers used by the entity. The inventory shall be certified by an independent verifier accredited pursuant to 310 CMR 7.70(10)(f).
- iii. The project sponsor shall provide a monitoring and verification plan as part of the consistency application, which shall include an SF<sub>6</sub> inventory management and auditing protocol and a process for quality assurance and quality control of inventory data. The monitoring and verification plan shall be certified by an independent verifier accredited pursuant to 310 CMR 7.70(10)(f).

3. Sequestration of carbon due to afforestation. To qualify for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10), ~~Offset projects that sequester carbon through the conversion of land from a non-forested to a forested condition shall qualify for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10), provided they meet the requirements of this 310 CMR 7.70(10)(e)3. and all other applicable requirements of 310 CMR 7.70(10).~~

a. Eligibility.

- i. Eligible offset projects shall occur on land that has been in a non-forested state for at least 10 years preceding the commencement of the offset project.
- ii. Eligible offset projects shall be managed in accordance with widely accepted environmentally sustainable forestry practices and designed to promote the restoration of native forests by using mainly native species and avoiding the introduction of invasive nonnative species. If commercial timber harvest activities are to occur, certification of these activities must be obtained, prior to any harvest activities at the site, through the Forest Stewardship Council (FSC), Sustainable Forestry Institute (SFI), American Tree Farm System (ATFS), or such other similar organizations as may be approved by the Department.

b. Offset project description. The offset project sponsor shall provide a detailed narrative of the offset project actions to be taken, including documentation that the offset project meets the eligibility requirements of 310 CMR 7.70(10)(e)3.a. The offset project narrative shall include the following information.

- i. Owner of the land within the offset project boundary;

- ii. Detailed map of the land within the offset project boundary and areas adjacent to the offset project boundary;
  - iii. A copy of the permanent conservation easement required pursuant to 310 CMR 7.70(10)(e)3.f.;
  - iv. For offset projects located in a state or United States jurisdiction that is not a participating state, a written legal opinion from an attorney licensed to practice in the state where the offset project is located, or from the cooperating regulatory agency, confirming the enforceability of the permanent conservation easement; and
  - v. Plant species to be planted or established via natural regeneration, and a forest management plan consistent with the requirements at 310 CMR 7.70(10)(e)3.a.ii.
- c. Carbon sequestration baseline determination. The existing sequestered carbon within the offset project boundary shall be calculated prior to commencement of the offset project. The carbon sequestration baseline shall be determined based on a sum of measurements, made no more than 12 months prior to offset project commencement, of the carbon content of the following carbon pools.
- i. Carbon content shall be calculated for the following required carbon pools:
    - (i) live aboveground tree biomass;
    - (ii) live belowground tree biomass;
    - (iii) soil carbon; and,
    - (iv) dead organic matter, coarse woody debris, unless the baseline measurement for this carbon pool is at or near zero, in which case measurement of this carbon pool during the allocation period is optional.
  - ii. Carbon content may be calculated for the following optional carbon pools:
    - (i) live aboveground non-tree biomass; and,
    - (ii) dead organic matter, forest floor.
  - iii. Carbon content shall be calculated individually for each carbon pool within the offset project boundary.
  - iv. To increase the accuracy of measurement and verification, the area within the offset project boundary shall be divided into subpopulations that form relatively homogenous units. When defining subpopulations, the project sponsor shall consider vegetation and tree species (including existing vegetation and trees and those to be utilized as part of the offset project activity) and site factors (soil type, elevation, slope, age class, and other factors as warranted).
  - v. Calculation of sequestered carbon for each carbon pool in each reporting subpopulation shall be based on the following:  

$$\text{CO}_2 \text{ tons} = [(A \times C/\text{ha})(44 \text{ g/mol CO}_2/12 \text{ g/mol C})] / 0.9072 \text{ metric tons/short ton}$$
 where:  
 A = Area in hectares within each reporting subpopulation;  
 C = Carbon content (metric tons of carbon for each carbon pool); and,  
 C/ha = Mean carbon content per hectare for each carbon pool.
  - vi. Total carbon contained within the offset project boundary (represented in CO<sub>2</sub> tons, calculated pursuant to 310 CMR 7.70(10)(e)3.c.v.) shall be calculated as follows:  

$$\text{TC}_{\text{pb}} = \text{TC}_{\text{latb}} + \text{TC}_{\text{lbfb}} + \text{TC}_{\text{s}} [+ \text{TC}_{\text{lantb}} + \text{TC}_{\text{doff}} + \text{TC}_{\text{docwd}}]$$
 where:

$TC_{pb}$  = Total carbon content within the offset project boundary (sum of carbon content of all carbon pools in all reporting subpopulations);

$TC_{latb}$  = Sum of carbon content of live aboveground tree biomass in all reporting subpopulations;

$TC_{lbtb}$  = Sum of carbon content of live belowground tree biomass in all reporting subpopulations;

$TC_s$  = Sum of carbon content of soil carbon in all reporting subpopulations;

$TC_{lantb}$  [option] = Sum of carbon content of live aboveground non-tree biomass in all reporting subpopulations;

$TC_{doff}$  [option] = Sum of carbon content of dead organic matter, forest floor in all reporting subpopulations; and,

$TC_{docwd}$  [mandatory/option, as applicable pursuant to 310 CMR

7.70(10)(e)3.c.i.(iv)] = Sum of carbon content of dead organic matter, coarse woody debris in all reporting subpopulations.

vii. Each individual carbon pool to be measured must be directly measured using a measurement protocol and sample size that achieves a demonstrated quantified accuracy for the combined carbon pool measurement such that there is 95% confidence that the resulting reported value is within 10% of the true mean. Measurement and sampling practices shall meet the following requirements:

(i) An adequate sample size that meets the requirements of 310 CMR 7.70(10)(e)3.c.vii. shall be determined for each subpopulation.

(ii) The minimum number of required sampling plots for each subpopulation shall not be less than 30, and shall be determined based on the following:

$$n = [(s \times 1.960) / (\text{mean} \times \text{re})]^2$$

where:

$n$  = required number of sample plots for each reporting subpopulation;

$s$  = standard deviation;

mean = mean reported carbon content for the sample population; and,

$\text{re}$  = level of sampling error (0.08) to assure a total maximum error of 10% for the 95% confidence interval, which assumes total error due to measurement error of 0.02.

viii. Direct measurement procedures shall be consistent with current forestry good practice and the guidance contained in U.S. Department of Energy, Technical Guidelines Voluntary Reporting of Greenhouse Gases (1605(b)) Program; Chapter 1, Emissions Inventories; Part 1 Appendix: Forestry; Section 3: Measurement Protocols for Forest Carbon Sequestration (March 2006).

d. Calculating carbon sequestered. Carbon sequestration shall be determined using a base year approach, where the amount of carbon sequestered is measured as a net increase in carbon relative to the base year measurement. Carbon sequestration shall be the amount of net additional carbon sequestered during each reporting period, based upon aggregate carbon uptake and carbon emissions for the sum of carbon pools, relative to the baseline carbon content or the carbon content as of the previous reporting period (if above the baseline carbon content), as applicable. CO<sub>2</sub> offset allowances shall be issued based on the amount of net additional carbon sequestered within the offset project boundary during each

reporting period, as represented in tons of CO<sub>2</sub>. Sequestered carbon shall be calculated using a stock-change approach as follows:

$$NCS_t = I_t - I_{t-1}$$

where:

$NCS_t$  = Net carbon sequestered in reporting period  $t$ ;

$I_t$  = Inventory of carbon stock for all carbon pools in all reporting subpopulations within the offset project boundary in reporting period  $t$ ; and,

$I_{t-1}$  = Inventory of carbon stock for all carbon pools in all reporting subpopulations within the offset project boundary in the reporting period immediately preceding reporting period  $t$ .

- i. Except as provided in 310 CMR 7.70(10)(e)3.c.i.(iv), each of the carbon pools that were measured as part of the baseline determination must be re-measured using the same methodology, and to the same or better quantified precision consistent with the requirements of 310 CMR 7.70(10)(e)3.c.vii. and viii., as that used for the baseline determination.
  - ii. The net change in each carbon pool's carbon stock in each reporting subpopulation is calculated by subtracting the baseline carbon stock (or carbon stock at the previous monitoring, if above the baseline carbon content) from the carbon stock at the time of the current monitoring. Determination of carbon stock shall be in accordance with the formulas and procedures in 310 CMR 7.70(10)(e)3.c.
  - iii. Net carbon stock change for the offset project is the sum of the net changes in the carbon stock of all applicable pools in all reporting subpopulations within the offset project boundary, less ten percent (10%) to account for potential losses of sequestered carbon; however, this 10% discount shall not be required, provided the project sponsor retains long-term insurance, approved by the Department, that guarantees replacement of any lost sequestered carbon for which CO<sub>2</sub> offset allowances were awarded pursuant to 310 CMR 7.70(10)(g)1.a.
- e. Monitoring and verification requirements. Total carbon stock within the offset project boundary shall be calculated not less than every five years. Monitoring and verification is subject to the following requirements.
- i. Monitoring and verification reports shall include data from direct measurement of carbon content for all plots used to determine baseline and reporting period carbon content.
  - ii. The project sponsor shall provide a monitoring and verification plan as part of the consistency application. The monitoring and verification plan shall be certified by an independent verifier accredited pursuant to 310 CMR 7.70(10)(f). The monitoring and verification plan shall include the following:
    - (i) Direct carbon measurement procedures consistent with the requirements at 310 CMR 7.70(10)(e)3.c.viii.;
    - (ii) The designation of subpopulations pursuant to 310 CMR 7.70(10)(e)3.c.iv.;
    - (iii) The determination of the minimum number of sampling plots pursuant to 310 CMR 7.70(10)(e)3.c.vii.; and,
    - (iv) If commercial timber harvest activities have occurred or will occur, an assessment of management practices to ensure that the offset project has been or will be managed in accordance with environmentally sustainable forestry practices consistent with the Forest Stewardship

Council (FSC), Sustainable Forestry Institute (SFI), American Tree Farm System (ATFS), or such other similar organizations as may be approved by the Department.

f. Carbon sequestration permanence. The offset project shall meet the following requirements to address permanence of sequestered carbon.

- i. The project sponsor shall place the land within the offset project boundary under a legally binding permanent conservation easement, approved by the Department, that requires the land to be maintained in a forested state in perpetuity.
- ii. The conservation easement shall include a requirement that the carbon density within the offset project boundary be maintained at long-term levels at or above that achieved as of the end of the CO<sub>2</sub> offset crediting period pursuant to 310 CMR 7.70(10)(c)5.b.
- iii. The conservation easement shall require that the land be managed in accordance with environmentally sustainable forestry practices.

4. Reduction or avoidance of CO<sub>2</sub> emissions from natural gas, oil, or propane end-use combustion due to end-use energy efficiency. To qualify for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10), ~~Offset projects that reduce CO<sub>2</sub> emissions by reducing onsite combustion of natural gas, oil, or propane for end-use in an existing or new commercial or residential building by improving the energy efficiency of fuel usage and/or the energy-efficient delivery of energy services shall qualify for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10), provided they meet the requirements of 310 CMR 7.70(10)(e)4, and all other applicable requirements of 310 CMR 7.70(10).~~ Eligible new buildings are limited to new buildings that are designed to replace an existing building on the offset project site, or new buildings designed to be zero net energy buildings.

a. Eligibility.

i. Eligible offset projects shall reduce CO<sub>2</sub> emissions through one or more of the following energy conservation measures (ECMs):

- (i) Improvements in the energy efficiency of combustion equipment that provide space heating and hot water, including a reduction in fossil fuel consumption through the use of renewable solar and geothermal energy;
- (ii) Improvements in the efficiency of heating distribution systems, including proper sizing and commissioning of heating systems;
- (iii) Installation or improvement of energy management systems;
- (iv) Improvement in the efficiency of hot water distribution systems and reduction in demand for hot water;
- (v) Measures that improve the thermal performance of the building envelope and/or reduce building envelope air leakage;
- (vi) Measures that improve the passive solar performance of buildings and utilization of active heating systems using renewable energy; and,
- (vii) Fuel switching to a less carbon-intensive fuel for use in combustion systems, including the use of liquid or gaseous renewable fuels eligible biomass, provided that conversions to electricity are not eligible.

ii. Performance standards.

- (i) All end-use energy efficiency offset projects. All offset projects under 310 CMR 7.70(10)(e)4. shall meet the applicable performance criteria set forth in 310 CMR 7.70(10)(e)4.a.ii(i).

-1. Installation best practice. Any combustion equipment and related air handling equipment (HVAC systems) installed as part of an offset project shall be sized and installed in accordance with the applicable requirements and specifications outlined in 310 CMR

7.70(10)(e)4.a.ii(i)-1.

-a. Commercial HVAC systems shall meet the applicable sizing and installation requirements of ANSI/ASHRAE/IESNA Standard 90.12004: Energy Standard for Buildings Except Low-Rise Residential Buildings and ANSI/ASHRAE Standard 62.12004: Ventilation for Acceptable Indoor Air Quality.

-b. Residential HVAC systems shall meet the applicable sizing specifications of Air Conditioner Contractors of America (ACCA) Manual J: Residential Load Calculation (Eight Edition), and the applicable installation specifications of "Specification of Energy-Efficient Installation and Maintenance Practices for Residential HVAC Systems," Consortium for Energy Efficiency, 2000.

-2. Whole-building energy performance. Eligible new buildings or whole-building retrofits that are part of an offset project shall meet the requirements of 310 CMR 7.70(10)(e)4.a.ii(i)-2.

-a. Commercial buildings shall exceed the energy performance requirements of ANSI/ASHRAE/IESNA Standard 90.12004: Energy Standard for Buildings Except Low-Rise Residential Buildings by 30%, with the exception of multifamily residential buildings classified as commercial by ANSI/ASHRAE/IESNA Standard 90.12004, which shall exceed these energy performance requirements by 20%.

-b. Residential buildings shall exceed the energy performance requirements of the 2004 International Energy Conservation Code Supplement by 30%.

(ii) Offset projects commenced before January 1, 2009. Energy conservation measures implemented as part of an offset project commenced before January 1, 2009 shall meet the performance and prescriptive criteria set forth in 310 CMR 7.70(10)(e)4.a.ii(ii).

-1. Combustion equipment. Combustion equipment installed as part of an offset project commenced before January 1, 2009 shall meet the energy efficiency performance standards contained in 310 CMR

7.70(10)(e)4.a.ii(ii)-1.

-a. Commercial boilers. Commercial boilers shall meet or exceed the energy efficiency criteria in Table 2 below.

310 CMR 7.70(10)(e)4.a.ii(ii)-1.-a. Table 2  
Minimum Commercial Boiler Energy Efficiency

<u>Technology</u>	<u>Size (Btu/hr)</u>	<u>Rating Method</u>	<u>Minimum Efficiency</u>

Gas-fired <sup>a</sup>	125,000-300,000	AFUE	≥ 88.0%
	300,000-12,500,000	Thermal Efficiency <sup>b</sup>	≥ 90.0%
Oil-fired	>300,000	Thermal Efficiency	≥ 88.0%

<sup>a</sup> Gas-fired boilers shall be installed with controls that allow the boiler to operate in condensing mode and installed with vents designed for positive vent static pressure and vent gas temperature that leads to condensate production in the vent.

<sup>b</sup> Thermal Efficiency is defined as useful energy output (Btu) divided by energy input (Btu), and presented as a percentage. This shall be measured under steady state conditions, at full rated useful thermal output, 140°F supply from, and 120°F return water temperature to, the boiler.

-b. Residential combustion equipment. Residential combustion equipment, including furnaces, boilers, and water heaters, shall meet or exceed the energy efficiency criteria in Table 3 below.

310 CMR 7.70(10)(e)4.a.ii.(ii)-1.-b. Table 3 Minimum Residential Combustion Equipment <sup>a</sup> Energy Efficiency		
<u>Technology</u>	<u>Rating Method</u>	<u>Minimum Efficiency</u>
Gas-fired furnace	AFUE	≥ 94%
Oil-fired furnace	AFUE	≥ 92%
Gas/oil-fired boiler	AFUE	≥ 90%
Gas/oil-fired water heater	Energy Factor	≥ <u>62%</u>

<sup>a</sup> For furnaces, defined as equipment with a heat input rate of less than 225,000 Btu/hr; for boilers, defined as equipment with a heat input rate of less than 300,000 Btu/hr; for water heaters, defined as equipment subject to 10 CFR 430.

-2. Other energy conservation measures. All other energy conservation measures implemented as part of an offset project shall meet the prescriptive requirements, as applicable, in Energy Benchmark for High Performance Buildings, Version 1.1, New Buildings Institute, 2005 (herein referred to as EBHPB), or

state building energy codes, whichever result in better energy performance. Energy conservation measures without specified performance criteria in the referenced EBHPB shall meet the requirements of Federal Energy Management Program (FEMP) Product Energy Efficiency Recommendations, issued pursuant to Executive Orders 13123 and 13221, or Energy Star criteria issued jointly by the U.S. Environmental Protection Agency and U.S.

Department of Energy, whichever result in better energy performance.

(iii) Maximum market penetration rate for offset projects commenced on or after January 1, 2009. For offset projects initiated on or after January 1, 2009, the project sponsor shall demonstrate, to the satisfaction of the Department, that the energy conservation measures implemented as part of the offset project have a market penetration rate of less than 5%.

b. Offset project description. The offset project sponsor shall provide a detailed narrative of the offset project actions to be taken, including documentation that the offset project meets the eligibility requirements of 310 CMR 7.70(10)(e)4.a.

The offset project narrative shall include the following information.

- i. Location and specifications of the building(s) where the offset project actions will occur;
- ii. Owner and operator of the building(s);
- iii. The parties implementing the offset project, including lead contractor(s), subcontractors, and consulting firms;
- iv. Specifications of equipment and materials to be installed as part of the offset project; and,
- v. Building plans and offset project technical schematics, as applicable.

c. Emissions baseline determination. The emissions baseline shall be determined in accordance with the requirements of 310 CMR 7.70(10)(e)4.c., based on energy usage (MMBtu) by fuel type for each energy conservation measure, derived using historic fuel use data from the most recent calendar year for which data is available, and multiplied by an emissions factor and oxidation factor for each respective fuel in Table 4 below.

<b>310 CMR 7.70(10)(e)4.c. Table 4</b> Emissions and Oxidation Factors		
<u>Fuel</u>	<u>Emissions Factor</u> <u>(lbs. CO<sub>2</sub>/MMBtu)</u>	<u>Oxidation Factor</u>
Natural Gas	116.98	0.995
Propane	139.04	0.995
Distillate Fuel Oil	161.27	0.99
Kerosene	159.41	0.99

i. Isolation of applicable energy conservation measure baseline. The baseline energy usage of the application to be targeted by the energy conservation



measure shall be isolated in a manner consistent with the guidance at 310 CMR 7.70(10)(e)4.e.

ii. Annual baseline energy usage shall be determined as follows:

$$\text{Energy Usage (MMBtu)} = \text{BEU}_{\text{AECM}} \times A$$

where:

$\text{BEU}_{\text{AECM}}$  = Annual pre-installation baseline energy use by fuel type (MMBtu) attributable to the application(s) to be targeted by the energy conservation measure(s). If applicable building codes or equipment standards require that equipment or materials installed as part of the offset project meet certain minimum energy performance requirements, baseline energy usage for the application shall assume that equipment or materials are installed that meet such minimum requirements. For offset projects that replace existing combustion equipment, the assumed minimum energy performance required by applicable building codes or equipment standards shall be that which applies to new equipment that uses the same fuel type as the equipment being replaced. Baseline energy usage shall be determined in accordance with the applicable requirements at 310 CMR 7.70(10)(e)4.e.

$A$  = Adjustments to account for differing conditions during the two time periods (pre-installation and post-installation), such as weather, building occupancy, and changes in building use or function. Adjustments shall be determined in accordance with the applicable requirements at 310 CMR 7.70(10)(e)4.e.

iii. Annual baseline emissions shall be determined as follows:

$$\text{Emissions (lbs. CO}_2\text{)} = \sum_{i=1}^n \text{BEU}_i \times \text{EF}_i \times \text{OF}_i$$

where:

$\text{BEU}_i$  = Annual baseline energy usage for fuel type  $i$  (MMBtu) demonstrated pursuant to the requirements at 310 CMR 7.70(10)(e)4.e.i. through iv. of 310 CMR 7.70(10)(e)4.;

$\text{EF}_i$  = Emissions factor (lbs.  $\text{CO}_2$ /MMBtu) for fuel type  $i$  listed at 310 CMR 7.70(10)(e)4.c., Table 4.; and,

$\text{OF}_i$  = Oxidation factor for fuel type  $i$  listed at 310 CMR 7.70(10)(e)4.c., Table 3.

d. Calculating emissions reductions. Emissions reductions shall be determined based upon annual energy savings by fuel type (MMBtu) for each energy conservation measure, multiplied by the emissions factor and oxidation factor for the respective fuel type at 310 CMR 7.70(10)(e)4.c., Table 4.

i. Annual energy savings shall be determined as follows:

$$\text{Energy Savings (MMBtu)} = (\text{BEU}_{\text{AECM}} \times A) - (\text{PIEU}_{\text{ECM}} \times A)$$

where:

$\text{BEU}_{\text{AECM}}$  = Annual pre-installation baseline energy use by fuel type (MMBtu) calculated pursuant to 310 CMR 7.70(10)(e)4.e.i. through iv.;

$\text{PIEU}_{\text{ECM}}$  = Annual post-installation energy use by fuel type (MMBtu) attributable to the energy conservation measure. Post-installation energy usage shall be determined in accordance with the applicable requirements at 310 CMR 7.70(10)(e)4.e.i. through iv.; and,

$A$  = Adjustments to account for any differing conditions during the two time periods (pre-installation and post-installation), such as weather, building

occupancy, and changes in building use or function. Adjustments shall be determined in accordance with the applicable requirements at 310 CMR 7.70(10)(e)4.e.

ii. Annual emissions reductions shall be determined as follows:

$$\text{Emissions Reduction (lbs. CO}_2\text{)} = \sum_{i=1}^n \text{ES}_i \times \text{EF}_i \times \text{OF}_i$$

where:

ES<sub>i</sub> = Energy savings for fuel type i (MMBtu) demonstrated pursuant to the requirements at 310 CMR 7.70(10)(e)4.e.;

EF<sub>i</sub> = Emissions factor (lbs. CO<sub>2</sub>/MMBtu) for fuel type i listed at 310 CMR 7.70(10)(e)4.c., Table 4.; and,

OF<sub>i</sub> = Oxidation factor for fuel type i listed at 310 CMR 7.70(10)(e)4.c., Table 4.

e. Monitoring and verification requirements. As part of the consistency application, the project sponsor shall provide a monitoring and verification plan certified by an independent verifier accredited pursuant to 310 CMR 7.70(10)(f). Annual monitoring and verification reports shall be certified by an independent verifier accredited pursuant to 310 CMR 7.70(10)(f). Independent verifiers must conduct a site audit when reviewing the first monitoring and verification report submitted by the project sponsor, except for offset projects that save less than 1,500 MMBtu per year. For offset projects that save less than 1,500 MMBtu per year, the project sponsor must provide the independent verifier with equipment specifications and copies of equipment invoices and other relevant offset project-related invoices. All offset project documentation, including the consistency application and monitoring and verification reports, shall be signed by a Professional Engineer, identified by license number. Monitoring and verification shall also meet the following requirements.

i. General energy measurement and verification requirements. Monitoring and verification of energy usage shall be demonstrated through a documented process consistent with the following protocols and procedures, as applicable.

(i) For existing commercial buildings, determination of baseline energy usage shall be consistent with the International Performance Measurement & Verification Protocol, Volume I: Concepts and Options for Determining Energy and Water Savings (IPMVP), “Option B. Retrofit Isolation” and “Option D. Calibrated Simulation.” If a building project involves only energy conservation measures implemented as part of a CO<sub>2</sub> emissions offset project, a process consistent with IPMVP “Option C. Whole Facility” may be used, as applicable. Application of the IPMVP general guidance shall be consistent with the applicable detailed specifications in ASHRAE Guideline 142002, Measurement of Energy and Demand Savings.

(ii) For new commercial buildings, determination of baseline energy usage shall be consistent with the International Performance Measurement & Verification Protocol, Volume III: Concepts and Options for Determining Energy Savings in New Construction (IPMVP), “Option D. Calibrated Simulation.” Application of the IPMVP general guidance shall be consistent with the applicable detailed specifications in ASHRAE Guideline 142002, Measurement of Energy and Demand Savings.

(iii) For existing and new residential buildings, determination of baseline energy usage shall be consistent with the requirements of the RESNET National Home Energy Rating Technical Guidelines, 2006 (Chapter 3 and Appendix A of 2006 Mortgage Industry National Home Energy Rating System Standards).

ii. Isolation of applicable energy conservation measure. In calculating both baseline energy usage and energy savings, the applicant shall isolate the impact of each eligible energy conservation measure (ECM), either through direct metering or energy simulation modeling. For offset projects with multiple ECMs, and where individual ECMs can affect the performance of others, the sum of energy savings due to individual ECMs shall be adjusted to account for the interaction of ECMs. For commercial buildings, this process shall be consistent with the requirements of ASHRAE Guideline 142002, Measurement of Energy and Demand Savings, and ANSI/ASHRAE/IESNA Standard 90.12004: Energy Standard for Buildings Except Low-Rise Residential Buildings. For residential buildings, this process shall be consistent with the requirements of RESNET National Home Energy Rating Technical Guidelines, 2006 (Chapter 3 and Appendix A of 2006 Mortgage Industry National Home Energy Rating System Standards). Reductions in energy usage due to the energy conservation measure shall be based upon actual energy usage data. Energy simulation modeling shall only be used to determine the relative percentage contribution to total fuel usage (for each respective fuel type) of the application targeted by the energy conservation measure.

iii. Calculation of energy savings. Annual energy savings are to be determined based on the following:

$$\text{Energy Savings (MMBtu)} = (\text{BEU}_{\text{AECM}} \times A) - (\text{PIEU}_{\text{ECM}} \times A)$$

where:

$\text{BEU}_{\text{AECM}}$  = Annual pre-installation baseline energy use by fuel type (MMBtu) attributable to the application(s) to be targeted by the energy conservation measure(s), based upon annual fuel usage data for the most recent calendar year for which data is available. For new buildings, baseline energy use for a reference building equivalent in basic configuration, orientation, and location to the building in which the eligible energy conservation measure(s) is implemented shall be determined according to ASHRAE Guideline 142002, Measurement of Energy and Demand Savings and ANSI/ASHRAE/IESNA Standard 90.12004, Section 11 and Appendix G. Where energy simulation modeling is used to evaluate an existing building, modeling shall be conducted in accordance with ASHRAE Guideline 142002, Measurement of Energy and Demand Savings, and ANSI/ASHRAE/IESNA Standard 90.12004, Section 11 and Appendix G. For existing and new residential buildings, energy simulation modeling shall be conducted in accordance with the requirements of RESNET National Home Energy Rating Technical Guidelines, 2006 (Chapter 3 and Appendix A of 2006 Mortgage Industry National Home Energy Rating System Standards).

$\text{PIEU}_{\text{ECM}}$  = Annual post-installation energy use by fuel type (MMBtu) attributable to the energy conservation measure, to be verified based on annual energy usage after installation of the energy conservation measure(s), consistent with the requirements of ASHRAE Guideline 142002,

Measurement of Energy and Demand Savings. Where energy simulation modeling is used to evaluate a new or existing building, modeling shall be conducted in accordance with ASHRAE Guideline 142002, Measurement of Energy and Demand Savings, and ANSI/ASHRAE/IESNA Standard 90.1 2004, Section 11 and Appendix G. For existing and new residential buildings, energy simulation modeling shall be consistent with the requirements of RESNET National Home Energy Rating Technical Guidelines, 2006 (Chapter 3 and Appendix A of 2006 Mortgage Industry National Home Energy Rating System Standards).

A = Adjustments to account for any differing conditions during the two time periods (pre-installation and post-installation), such as weather (weather normalized energy usage based on heating and cooling degree days), building occupancy, and changes in building use or function. For commercial buildings, adjustments shall be consistent with the specifications of ASHRAE Guideline 142002, Measurement of Energy and Demand Savings, and ANSI/ASHRAE/IESNA Standard 90.12004, Section 11 and Appendix G. For residential buildings, adjustments shall be consistent with the specifications of RESNET National Home Energy Rating Technical Guidelines, 2006 (Chapter 3 and Appendix A of 2006 Mortgage Industry National Home Energy Rating System Standards).

iv. Provision for sampling of multiple like offset projects in residential buildings. Offset projects that implement similar measures in multiple residential buildings may employ representative sampling of buildings to determine aggregate baseline energy usage and energy savings. Sampling protocols shall employ sound statistical methods such that there is 95% confidence that the reported value is within 10% of the true mean. Any sampling plan shall be certified by an independent verifier, accredited pursuant to 310 CMR 7.70(10)(f).

5. Avoided methane emissions from agricultural manure management operations. To qualify for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10), o~~Offset projects that capture and destroy methane from animal manure and organic food waste using anaerobic digesters shall qualify for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10), provided they meet the requirements of 310 CMR 7.70(10)(e)5. and all other applicable requirements of 310 CMR 7.70(10).~~

a. Eligibility.

i. Eligible offset projects shall consist of the destruction of that portion of methane generated by an anaerobic digester that would have been generated in the absence of the offset project through the uncontrolled anaerobic storage of manure or organic food waste.

ii. Eligible offset projects shall employ only manure-based anaerobic digester systems using livestock manure as the majority of digester feedstock, defined as more than 50% of the mass input into the digester on an annual basis. Organic food waste used by an anaerobic digester shall only be that which would have been stored in anaerobic conditions in the absence of the offset project.

iii. The provisions of 310 CMR 7.70(10)(c)4.b. and c. shall not apply to agricultural manure management offset projects provided either of the following requirements are met.

(i) The offset project is located in a state that has a market penetration rate for anaerobic digester projects of 5% or less. The market penetration determination shall utilize the most recent market data available at the time of submission of the consistency application pursuant to 310 CMR 7.70(10)(d) and shall be determined as follows:

$$MP (\%) = MG_{AD} / MG_{STATE}$$

where:

$MG_{AD}$  = Average annual manure generation for the number of dairy cows and swine serving all anaerobic digester projects in the applicable state at the time of submission of a consistency application pursuant to 310 CMR 7.70(10)(d); and,

$MG_{STATE}$  = average annual manure production of all dairy cows and swine in the state at the time of submission of a consistency application pursuant to 310 CMR 7.70(10)(d).

(ii) The offset project is located at a farm with 4,000 or less head of dairy cows, or a farm with equivalent animal units, assuming an average live weight for dairy cows (lbs./cow) of 1,400 lbs., or, if the project is a regional-type digester, total annual manure input to the digester is designed to be less than the average annual manure produced by a farm with 4,000 or less head of dairy cows, or a farm with equivalent animal units, assuming an average live weight for dairy cows (lbs./cow) of 1,400 lbs.

b. Offset project description. The offset project sponsor shall provide a detailed narrative of the offset project actions to be taken, including documentation that the offset project meets the eligibility requirements of 310 CMR 7.70(10)(e)5.a. The offset project narrative shall include the following information.

- i. Owner and operator of the offset project;
- ii. Location and specifications of the facility where the offset project will occur;
- iii. Owner and operator of the facility where the offset project will occur;
- iv. Specifications of the equipment to be installed and a technical schematic of the offset project; and,
- v. Location and specifications of the facilities from which anaerobic digester influent will be received, if different from the facility where the offset project will occur.

c. Emissions baseline determination. The emissions baseline shall represent the potential emissions of the CH<sub>4</sub> that would have been produced in a baseline scenario under uncontrolled anaerobic storage conditions and released directly to the atmosphere in the absence of the offset project.

- i. Baseline CH<sub>4</sub> emissions shall be calculated as follows:

$$CO_2e \text{ (tons)} = (V_m \times M) / 2000 \times GWP$$

where:

$CO_2e$  = Potential  $CO_2e$  emissions due to calculated CH<sub>4</sub> production under site-specific anaerobic storage and weather conditions;

$V_m$  = Volume of CH<sub>4</sub> produced each month from degradation of volatile solids in a baseline uncontrolled anaerobic storage scenario under site-specific storage and weather conditions for the facility at which the manure or organic food waste is generated (ft<sup>3</sup>);

M = Mass of CH<sub>4</sub> per cubic foot (0.04246 lb/ft<sup>3</sup> default value at one atmosphere and 20°C); and,

GWP = Global warming potential of CH<sub>4</sub> (23).

ii. The estimated amount of volatile solids degraded each month under the uncontrolled anaerobic storage baseline scenario (kg) shall be calculated as follows:

$$VS_{deg} = VS_{avail} \times f$$

where:

VS = volatile solids as determined from the equation:

$$VS = M_m \times TS_{\%} \times VS_{\%}$$

where:

M<sub>m</sub> = mass of manure or organic food waste produced per month (kg);

TS<sub>%</sub> = concentration (percent) of total solids in manure or organic food waste as determined through EPA 160.3 testing method (U.S.EPA Method Number 160.3, Methods for the Chemical Analysis of Water and Wastes (MCAWW) (EPA/600/479/020)); and,

VS<sub>%</sub> = concentration (percent) of volatile solids in total solids as determined through EPA 160.4 testing method (U.S.EPA Method Number 160.4, Methods for the Chemical Analysis of Water and Wastes (MCAWW) (EPA/600/479/020)).

VS<sub>avail</sub> = volatile solids available for degradation in manure or organic food waste storage each month as determined from the equation:

$$VS_{avail} = VS_p + \frac{1}{2} VS_{in} - VS_{out}$$

where:

VS<sub>p</sub> = volatile solids present in manure or organic food waste storage at beginning of month (left over from previous month) (kg);

VS<sub>in</sub> = volatile solids added to manure or organic food waste storage during the course of the month (kg). The factor of ½ is multiplied by this number to represent the average mass of volatile solids available for degradation for the entire duration of the month; and,

VS<sub>out</sub> = volatile solids removed from the manure or organic food waste storage for land application or export (assumed value based on standard farm practice).

f = van't Hoff-Arrhenius factor for the specific month as determined using the equation below. Using a base temperature of 30 ° C, the equation is as follows:

$$f = \exp \left\{ \frac{E(T_2 - T_1)}{[GC \times T_1 \times T_2]} \right\}$$

where:

f = conversion efficiency of VS to CH<sub>4</sub> per month;

E = activation energy constant (15,175 cal/mol);

T<sub>2</sub> = average monthly ambient temperature for facility where manure or organic food waste is generated (converted from ° Celsius to Kelvin) as determined from the nearest National Weather Service certified weather station (if T<sub>2</sub> > 5 ° C; if T<sub>2</sub> < 5 ° C, then f = 0.104);

T<sub>1</sub> = 303.15 (30 ° C converted to K); and,

GC = ideal gas constant (1.987 cal/K mol).

iii. The volume of CH<sub>4</sub> produced (ft<sup>3</sup>) from degradation of volatile solids shall be calculated as follows:

$$V_m = (VS_{deg} \times B_o) \times 35.3147 \text{ ft}^3/\text{m}^3$$

where:

$V_m$  = volume of  $CH_4$  ( $ft^3$ );

$VS_{deg}$  = volatile solids degraded (kg); and,

$B_o$  = manure or organic food waste type-specific maximum methane generation constant ( $m^3 CH_4/kg$  VS degraded). For dairy cow manure,  $B_o = 0.24 m^3 CH_4/kg$  VS degraded. The methane generation constant for other types of manure shall be those cited at U.S. EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2004, Annex 3, Table A-162 (U.S. EPA, April 2007), unless the project sponsor proposes an alternate methane generation constant. If the project sponsor proposes to use a methane generation constant other than the ones found in the above-cited reference, the project sponsor must provide justification and documentation to the Department.

d. Calculating emissions reductions. Emissions reductions shall be determined based on the potential emissions (in tons of  $CO_2e$ ) of the  $CH_4$  that would have been produced in the absence of the offset project under a baseline scenario that represents uncontrolled anaerobic storage conditions, as calculated pursuant to 310 CMR 7.70(10)(e)5.c.i. through iii., and released directly to the atmosphere. Emissions reductions may not exceed the potential emissions of the anaerobic digester, as represented by the annual volume of  $CH_4$  produced by the anaerobic digester, as monitored pursuant to 310 CMR 7.70(10)(e)5.e. If the project is a regional-type digester,  $CO_2$  emissions due to transportation of manure and organic food waste from the site where the manure and organic food waste was generated to the anaerobic digester shall be subtracted from the emissions reduction calculated pursuant to 310 CMR 7.70(10)(e)5.c.i. through iii. Transport  $CO_2$  emissions shall be determined through one of the following methods.

i. Documentation of transport fuel use for all shipments of manure and organic food waste from offsite to the anaerobic digester during each reporting year and a log of transport miles for each shipment.  $CO_2$  emissions shall be determined through the application of an emissions factor for the fuel type used. If this option is chosen, the following emissions factors shall be applied as appropriate.

(i) Diesel fuel: 22.912 lbs.  $CO_2$ /gallon.

(ii) Gasoline: 19.878 lbs.  $CO_2$ /gallon.

(iii) Other fuel: submitted emissions factor approved by the Department.

ii. Documentation of total tons of manure and organic food waste transported from offsite for input into the anaerobic digester during each reporting year, as monitored pursuant to 310 CMR 7.70(10)(e)5.e.i., and a log of transport miles and fuel type used for each shipment.  $CO_2$  emissions shall be determined through the application of a ton-mile transport emission factor for the fuel type used. If this option is chosen, the following emissions factors shall be applied as appropriate for each ton of manure delivered, and multiplied by the number of miles transported.

(i) Diesel fuel: 0.131 lbs.  $CO_2$  per ton-mile.

(ii) Gasoline: 0.133 lbs.  $CO_2$  per ton-mile.

(iii) Other fuel: submitted emissions factor approved by the Department.

e. Monitoring and verification requirements. Offset projects shall employ a system that provides metering of biogas volumetric flow rate and determination of  $CH_4$  concentration. Annual monitoring and verification reports shall include

monthly biogas volumetric flow rate and CH<sub>4</sub> concentration determination.

Monitoring and verification shall also meet the following requirements.

- i. If the offset project is a regional-type digester, manure and organic food waste from each distinct source supplying to the anaerobic digester shall be sampled monthly to determine the amount of volatile solids present. Any emissions reduction shall be calculated according to mass of manure and organic food waste (kg) being digested and percentage of volatile solids present before digestion, consistent with the requirements at 310 CMR 7.70(10)(e)5.c. and e.iii., and apportioned accordingly among sources. The project sponsor shall provide supporting material and receipts tracking the monthly receipt of manure and organic food waste (kg) used to supply the anaerobic digester from each supplier.
- ii. If the offset project includes the digestion of organic food waste eligible pursuant to 310 CMR 7.70(10)(e)5.a.ii., organic food waste shall be sampled monthly to determine the amount of volatile solids present before digestion, consistent with the requirements at 310 CMR 7.70(10)(e)5.c. and e.iii., and apportioned accordingly.
- iii. The project sponsor shall submit a monitoring and verification plan as part of the consistency application that includes a quality assurance and quality control program associated with equipment used to determine biogas volumetric flow rate and CH<sub>4</sub> composition. The monitoring and verification plan shall be specified in accordance with the applicable monitoring requirements listed in Table 5, below. The monitoring and verification plan shall also include provisions for ensuring that measuring and monitoring equipment is maintained, operated, and calibrated based on manufacturer's recommendations, as well as provisions for the retention of maintenance records for audit purposes. The monitoring and verification plan shall be certified by an independent verifier accredited pursuant to 310 CMR 7.70(10)(f).



**310 CMR 7.70(10)(e)5.e.iii. Table 5**

**Input Monitoring Requirements**

<b>Input Parameter</b>	<b>Measurement Unit</b>	<b>Frequency of Sampling</b>	<b>Sampling Method(s)</b>
Influent flow (mass) into the digester	Kilograms (kg) per month (wet weight)	Monthly total into the digester	a) Recorded weight b) Digester influent pump flow  c) Livestock population and application of American Society of Agricultural and Biological Engineers (ASABE) standard (ASAE D384.2, March 2005)
Influent total solids concentration (TS)	Percent (of sample)	Monthly, depending upon recorded variations	U.S. EPA Method Number 160.3, Methods for the Chemical Analysis of Water and Wastes (MCAWW) (EPA/600/4-79/020)
Influent volatile solids (VS) concentration	Percent (of TS)	Monthly, depending upon recorded variations	USEPA Method Number 160.4, Methods for the Chemical Analysis of Water and Wastes (MCAWW) (EPA/600/4-79/020)
Average monthly ambient temperature	Temperature °C	Monthly (based on farm averages)	Closest National Weather Service-certified weather station

iv. The project sponsor shall verify biogas CH<sub>4</sub> composition quarterly through gas sampling and third party laboratory analysis using applicable U.S. EPA test methods.

**(f) Accreditation of independent verifiers.**

1. **Standards for accreditation.** Independent verifiers may be accredited by the Department to provide verification services as required of project sponsors under 310 CMR 7.70(10), provided that independent verifiers meet all of the requirements of 310 CMR 7.70(10)(f)e).

a. **Verifier minimum requirements.** Each accredited independent verifier shall demonstrate knowledge of the following topics:

- i. utilizing engineering principles;
- ii. quantifying greenhouse gas emissions;
- iii. developing and evaluating air emissions inventories;
- iv. auditing and accounting principles;

- v. knowledge of information management systems;
  - vi. knowledge of the requirements of 310 CMR 7.70(10) and other applicable requirements of 310 CMR 7.70; and
  - vii. such other qualifications as may be required by the Department to provide competent verification services as required for individual offset categories specified at 310 CMR 7.70(10)(e).
- b. Organizational qualifications. Accredited independent verifiers shall demonstrate that they meet the following requirements:
- i. Verifiers shall have no direct or indirect financial relationship, beyond a contract for provision of verification services, with any offset project developer or project sponsor;
  - ii. Verifiers shall employ staff with knowledge, experience, and, where appropriate, professional licenses relevant to the specific category(ies) of offset projects at 310 CMR 7.70(10)(e) that they seek to verify;
  - iii. Verifiers shall hold a minimum of one million U.S. dollars of professional liability insurance. If the insurance is in the name of a related entity, the verifier shall disclose the financial relationship between the verifier and the related entity, and provide documentation supporting the description of the relationship; and,
  - iv. Verifiers shall demonstrate that they have implemented an adequate management protocol to identify potential conflicts of interest with regard to an offset project, offset project developer, or project sponsor, or any other party with a direct or indirect financial interest in an offset project that is seeking or has been granted approval of a consistency application pursuant to 310 CMR 7.70(10)(d)5., and remedy any such conflicts of interest prior to providing verification services.
- c. Prequalification of verifiers. The Department may require prospective verifiers to successfully complete a training course, workshop, or test developed by the Department or its agent, prior to submitting an application for accreditation.
2. Application for accreditation. An application for accreditation shall not contain any proprietary information, and shall include, on a form prescribed by the Department, the following:
- a. The applicant's name, address, email address, telephone number, and facsimile transmission number;
  - b. Documentation that the applicant has at least two years of experience in each of the knowledge areas specified at 310 CMR 7.70(10)(e)1.a.i. through v., and as may be required pursuant to 310 CMR 7.70(10)(e)1.a.vii.;
  - c. Documentation that the applicant has successfully completed the requirements at 310 CMR 7.70(10)(e)1.c., as applicable;
  - d. A sample of at least one work product that provides supporting evidence that the applicant meets the requirements at 310 CMR 7.70(10)(e)1.a. and b. The work product shall have been produced, in whole or part, by the applicant and shall consist of a final report or other material provided to a client under contract in previous work. For a work product that was jointly produced by the applicant and another entity, the role of the applicant in the work product shall be clearly explained;
  - e. Documentation that the applicant holds professional liability insurance as required pursuant to 310 CMR 7.70(10)(e)1.b.iii.; and

- f. Documentation that the applicant has implemented an adequate management protocol to address and remedy any conflict of interest issues that may arise, as required pursuant to 310 CMR 7.70(10)(e)1.b.iv.
3. Department action on applications for accreditation. The Department shall approve or deny a complete application for accreditation within 90 days after submission. Upon approval of an application for accreditation, the independent verifier shall be accredited for a period of three years from the date of application approval.
4. Reciprocity. Independent verifiers accredited in other participating states may be deemed to be accredited in Massachusetts, at the discretion of the Department.
5. Conduct of accredited verifiers.
- a. Prior to engaging in verification services for an offset project sponsor, the accredited verifier shall disclose all relevant information to the Department to allow for an evaluation of potential conflict of interest with respect to an offset project, offset project developer, or project sponsor. The accredited verifier shall disclose information concerning its ownership, past and current clients, related entities, as well as any other facts or circumstances that have the potential to create a conflict of interest.
  - b. Accredited verifiers shall have an ongoing obligation to disclose to the Department any facts or circumstances that may give rise to a conflict of interest with respect to an offset project, offset project developer, or project sponsor.
  - c. The Department may reject a verification report and certification statement from an accredited verifier, submitted as part of a consistency application required pursuant to 310 CMR 7.70(10)(d)2. or submitted as part of a monitoring and verification report submitted pursuant to 310 CMR 7.70(10)(g)2., if the Department determines that the accredited verifier has a conflict of interest related to the offset project, offset project developer, or project sponsor.
  - d. The Department may revoke the accreditation of a verifier at any time given cause, for the following:
    - i. Failure to fully disclose any issues that may lead to a conflict of interest situation with respect to an offset project, offset project developer, or project sponsor;
    - ii. The verifier is no longer qualified due to changes in staffing or other criteria;
    - iii. Negligence or neglect of responsibilities pursuant to the requirements of 310 CMR 7.70(10); and,
    - iv. Intentional misrepresentation of data or other intentional fraud.

(g) Award and Recordation of CO<sub>2</sub> offset allowances.

1. Quantities of CO<sub>2</sub> offset allowances that may be awarded, and subsequently recorded.
- a. Award of CO<sub>2</sub> offset allowances.
    - ia. CO<sub>2</sub> emissions offset projects. Following the issuance of a consistency determination under 310 CMR 7.70(10)(d)5.b. and the approval of a monitoring and verification report under the provisions of 310 CMR 7.70(10)(g)5., the Department shall award one CO<sub>2</sub> offset allowance for each ton of demonstrated reduction in CO<sub>2</sub> or CO<sub>2</sub> equivalent emissions or sequestration of CO<sub>2</sub>.

- iib. CO<sub>2</sub> emissions credit retirement. If a project sponsor received a consistency determination pursuant to 310 CMR 7.70(10)(d)5.b., one CO<sub>2</sub> offset allowance shall be awarded for each ton of reduction of CO<sub>2</sub> or CO<sub>2</sub> equivalent or sequestration of CO<sub>2</sub>, represented by the relevant credits or allowances retired. If a credit or allowance is represented in metric tons, 1.1023 tons shall be awarded for every metric ton, provided that total CO<sub>2</sub> offset allowances awarded shall be rounded down to the nearest whole ton.
- b. Recordation of CO<sub>2</sub> offset allowances. After CO<sub>2</sub> offset allowances are awarded under 310 CMR 7.70(10)(g)1.a., the Department shall record such CO<sub>2</sub> offset allowances in the project sponsor's general account.
2. Deadlines for submittal of monitoring and verification reports.
- a. For CO<sub>2</sub> emissions offset projects undertaken prior to January 1, 2009, the project sponsor must submit the monitoring and verification report covering the pre-2009 period on or before June 30, 2009.
- b. For CO<sub>2</sub> emissions offset projects undertaken on or after January 1, 2009, the monitoring and verification report must be submitted within 6 months following the completion of the last calendar year during which the offset project achieved CO<sub>2</sub> equivalent reductions or sequestration of CO<sub>2</sub> for which the project sponsor seeks the award of CO<sub>2</sub> offset allowances.
3. Contents of monitoring and verification reports. For an offset project, the monitoring and verification report ~~must~~ shall include the following information.
- a. The project's sponsor's name, address, email address, telephone number, facsimile transmission number, and account number.
- b. The CO<sub>2</sub> emissions reduction or CO<sub>2</sub> sequestration determination as required by the relevant provisions of 310 CMR 7.70(10)(e), including a demonstration that the project sponsor complied with the required quantification, monitoring, and verification procedures under 310 CMR 7.70(10)(e), as well as those outlined in the consistency application approved pursuant to 310 CMR 7.70(10)(d)5.b.
- c. A signed statement that reads "The undersigned project sponsor hereby confirms and attests that the offset project upon which this monitoring and verification report is based is in full compliance with all of the requirements of 310 CMR 7.70(10). The project sponsor holds the legal rights to the offset project, or has been granted the right to act on behalf of a party that holds the legal rights to the offset project. I understand that eligibility for the award of CO<sub>2</sub> offset allowances under 310 CMR 7.70(10) is contingent on meeting the requirements of 310 CMR 7.70(10). I authorize the Department or its agent to audit this offset project for purposes of verifying that the offset project, including the monitoring and verification plan, has been implemented as described in the consistency application that was the subject of a consistency determination by the Department. I understand that this right to audit shall include the right to enter the physical location of the offset project. I submit to the legal jurisdiction of Massachusetts."
- d. ~~A list of all offset projects under the sponsor's ownership or control (or under the ownership or control of any entity which controls, is controlled by, or has common control with the sponsor) for which a consistency application or a monitoring and verification application has been submitted under 310 CMR 7.70(10) (or similar provisions in the rules of other participating states). If any consistency application or monitoring and verification application has been denied, revoked, voided, or terminated by the Department or any participating~~

~~state, then such status shall be stated and explained. The Department reserves the right to reject a consistency application or a monitoring and verification application in the event that a project applicant has a history of fraud, deceit, deception, misrepresentation, or the providing of false or misleading information to the Department or other participating states regarding CO<sub>2</sub> emissions offset projects. A list of all offset projects under the sponsor's ownership or control (or under the ownership or control of any entity which controls, is controlled by, or has common control with the sponsor) for which a consistency application or a monitoring and verification application has been submitted under 310 CMR 7.70(10), or similar provisions in the rules of other participating states. If any consistency application or monitoring and verification application has been denied or revoked by the Department or any participating state, then such status shall be documented and explained. If any CO<sub>2</sub> offset allowance has been revoked or retired by the Department or any participating state as a result of a determination that a project sponsor has not complied with the requirements of 310 CMR 7.70(10), or similar provisions in the rules of other participating states, then such action shall be documented and explained. The Department reserves the right to reject a consistency application or a monitoring and verification application on the basis of previous fraud, deceit, deception, misrepresentation, submittal of false or misleading information to the Department or other participating states regarding CO<sub>2</sub> emissions offset projects, or a finding under 310 CMR 7.70(10)(c)8. of failure to comply with the requirements of 310 CMR 7.70(10), or similar provisions in the rules of other participating states.~~

e. A verification report and certification statement signed by an independent verifier accredited pursuant to 310 CMR 7.70(10)(f) that documents that the independent verifier has reviewed the monitoring and verification report and evaluated the following in relation to the applicable requirements at 310 CMR 7.70(10)(e), and any applicable guidance issued by the Department:

- i. The adequacy and validity of information supplied by the project sponsor to determine CO<sub>2</sub> emissions reductions or CO<sub>2</sub> sequestration pursuant to the applicable requirements at 310 CMR 7.70(10)(e);
- ii. The adequacy and consistency of methods used to quantify, monitor, and verify CO<sub>2</sub> emissions reductions and CO<sub>2</sub> sequestration in accordance with the applicable requirements at 310 CMR 7.70(10)(e) and as outlined in the consistency application approved pursuant to 310 CMR 7.70(10)(d)5.b.; and,
- iii. Such other evaluations and verification reviews as may be required by the Department. The adequacy and validity of information supplied by the project sponsor to demonstrate that the offset project meets the applicable eligibility requirements of 310 CMR 7.70(10)(e).

f. Disclosure of any voluntary or mandatory programs, other than the CO<sub>2</sub> Budget Trading Program, to which greenhouse gas emissions data related to the offset project has been, or will be reported.

g. For offset projects located in a state or United States jurisdiction that is not a participating state, a demonstration that the project sponsor has complied with all requirements of the cooperating regulatory agency in the state or United States jurisdiction where the offset project is located.

h. The offset project sponsor shall make the following certification: "I certify that I have personally examined the foregoing information, and am familiar with the information contained in this application and any attachments thereto and that,

based on my inquiry of those persons immediately responsible for obtaining the information, I believe that the information contained in this application, is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment."

i. Monitoring and verification reports shall be submitted in a format approved by the Department.

4. Place for filing monitoring and verification reports. The monitoring and verification report must be filed with the same regulatory agency that issued the consistency determination for the offset project pursuant to 310 CMR 7.70(10)(d)5.b.

5. Department action on monitoring and verification reports. The Department shall approve or deny a complete monitoring and verification report, in a format approved by the Department, filed with the Department pursuant to 310 CMR 7.70(10)(g)4., within 90 days following receipt of a complete report. A complete monitoring and verification report is one that is in an approved form and is determined by the Department to be complete for the purpose of commencing review of the monitoring and verification report. In no event shall a completeness determination prevent the Department from requesting additional information in order to enable the Department to approve or deny a monitoring and verification report, submitted in a format approved by the Department, and filed under 310 CMR 7.70(10)(g).